ume VII.
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TEXTILE WORLD

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GUILD & LORD, Publishers, 620 Atlantic Avenue, Boston, Mass.

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Bleaching, Dyeing, Drying and Finishing Machinery.

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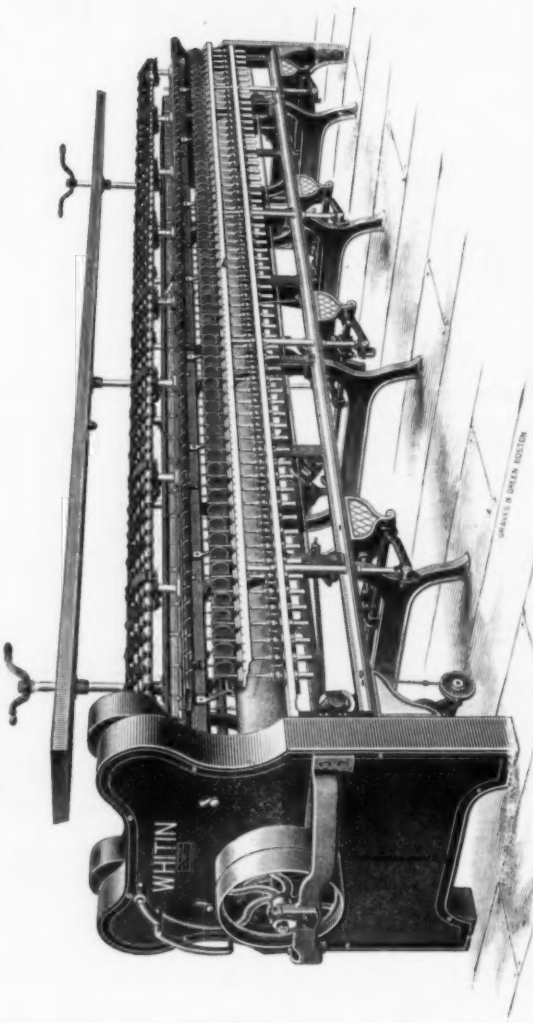
Reels,
Spoolers.



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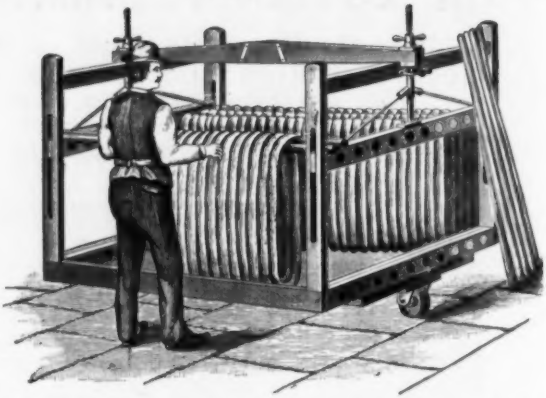

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For the Rapid Handling of Wool, Cotton Stock, Rags, Excelsior, Jute and all kinds of Fibrous Material, wet or dry.

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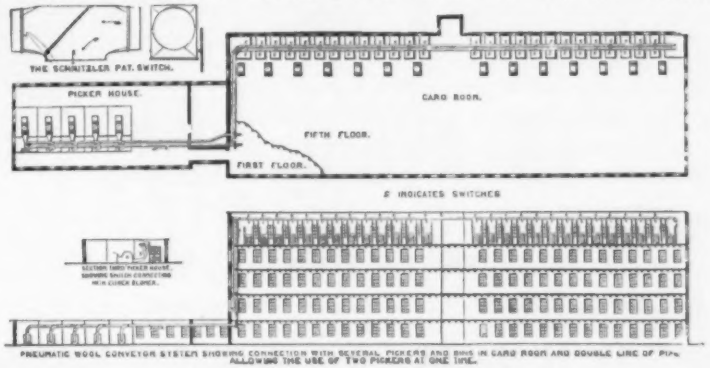

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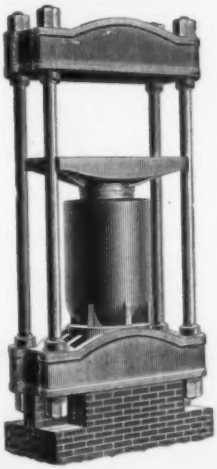

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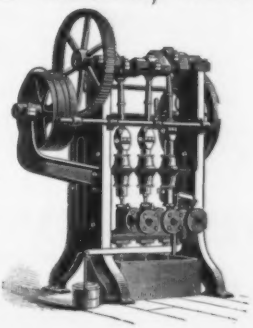

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LOOMS FOR EVERY GRADE OF WEAVING

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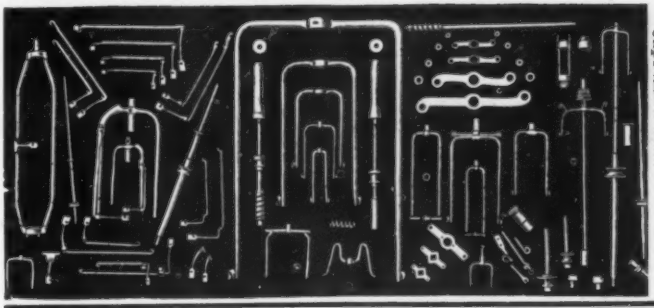

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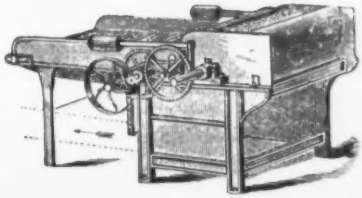

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RAG DUSTERS, NAPPERS,
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CLOTH MEASURING MACHINES.

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Alphabetical Index to Advertisements follows this Classified List.

Baskets, Raw Hide, etc.

Barlow, John W, Lawrence, Mass.

Balling Machine.

Torrance Mfg. Co, 18 Davis St, E. Newark, N. J.

Belting.

Danforth Belting Co, 221 Chestnut St, Phila, Pa.

See also Mill Supplies.

Boiler Compounds.

Imperial Chemical Co, 432 Market St, Phila, Pa.

Boxes, Paper.

Schoettle, F, 312 Branch St, Phila, Pa.

Burr Pickers.

Atlas Mfg. Co, Newark, N. J.

Card Clothing.

American Card Clothing Co, Worcester, Mass.

Radey, Cunningham & Co, Phila, Pa.

Card Cutters.

Hand, Fredk, & Co, 159 Van Houten St, Paterson, N. J.

Card Feeds.

Atlas Mfg. Co, Newark, N. J.

Harwood, Geo. S, & Son, Boston, Mass.

Calico Printers' Machinery and Supplies.

Hope, John, & Sons, Eng. Mfg. Co, Elmwood, Providence, R. I.

New Bedford Copper Co, New Bedford, Mass.

See also Dyeing, Bleaching Machinery, etc.

Carpet Machinery.

Altemus, W. W, & Son, 2816 N. 4th St, Phila, Pa.

Crompton Loom Works, Worcester, Mass.

Furbush, M. A, & Son, Machine Co, Phila, Pa.

Combs, Hackles, Pins, Etc.

Townsend, Thos, Manchester, Conn.

Copper Print Rollers.

New Bedford Copper Co, New Bedford, Mass.

Copper Work for Dyers.

Brabender, Chas, & Son, Paterson, N. J.

Oat, Jos. & Sons, 232 Quarry St, Phila, Pa.

Cotton.

See Ready Reference List.

Cotton Machinery.

Atherton Machine Co, Lowell, Mass.

Altemus, W. W, & Son, 2816 N. 4th St, Phila, Pa.

Draper, Geo, & Sons, Hopedale, Mass.

Kilburn, Lincoln & Co, Fall River, Mass.

McKerrow, H. G, & Co, 620 Atlantic Ave, Boston, Mass.

Mason Machine Wks, Taunton, Mass.

Pettee Machine Wks, Newton Upper Falls, Mass.

Providence Machine Co, Providence, R. I.

Whitin Machine Wks, Whitinsville, Mass.

Cotton Openers and Lappers.

Atherton Machine Co, Lowell, Mass.

Designers.

Designer, Box 222, Brooklyn, N. Y.

Hand, Fredk, & Co, 159 Van Houten St, Paterson, N. J.

Woolens, Box 719, Middleboro, Mass.

Dusters.

See Wool and Waste Dusters.

Dyeing, Drying, Bleaching and Finishing Machinery.

American Napping Machine Co, Williamstown, Mass.

Butterworth, H. W, & Sons Co, Phila, Pa.

Dill Spool Support Co, Hancock St. and Lehigh Ave, Phila, Pa.

Granger Foundry & Machine Co, Providence, R. I.

Lincoln & Co, 54 Arch St, Hartford, Ct.

Parks & Woolson Machine Co, Springfield, Vt.

Phœnix Iron Foundry, Providence, R. I.

Dyestuffs and Chemicals.

Anchor Color Mfg. Co, 464 Cherry St, N. Y.

Atteaux, F. E, & Co, 172 Purchase St, Boston, Mass.

Beach & Co, Hartford, Ct.

Bischoff, & Co, 80 Front St, N. Y.

Cottonade Chemical Co, Mill and Hancock Sts, Germantown, Phila, Pa.

Gould Commercial Co, 35 Hartford St, Boston, Mass.

Hanna, W. W, 52 N. Front St, Phila, Pa.

Harway Dyewood & Extract Mfg. Co, 184 Front St, N. Y.

Hill, Edward's Son & Co, 25 Cedar St, N. Y.

Holliday, Read & Sons, Ltd, 7 Platt St, N. Y.

Horsfall, Jonathan, 216 Chestnut St, Phila, Pa.

Innis & Co, 120 William St, N. Y.

Jaeck Bros, J, 67 Wythe Ave, Brooklyn, N. Y.

Johnson, Chas. A, & Co, 14 Dey St, N. Y.

Karcher, Ph. H, & Co, 14 Cedar St, N. Y.

Keller, John J, & Co, 104 Murray St, N. Y.

Klipstein, A, & Co, 122 Pearl St, N. Y.

Matheson, W. J, & Co, 178 Front St, N. Y.

Pickhardt, Wm, & Kuttroff, N. Y, & Boston.

Schulze-Berge & Koechl, 79 Murray St, N. Y.

Sehlbach, E, & Co, 77 William St, N. Y.

Sharpless, John M, & Co, 22 N. Front St, Phila, Pa.

Stamford Mfg. Co, 157 Maiden Lane, N. Y.

Welch, Holme & Clark Co, 383 West St, N. Y

Dyers and Finishers.

Boston Finishing Works, Williamstown Mass.

Haney, T. G, & Co, Jewett City, Conn.

Harrison Yarn & Dyeing Co, Pawtucket, R. I.

Home Bleach & Dye Works, Pawtucket, R. I.

Mason, The R. D, Co, Pawtucket, R. I.

Oakland Dye Works, 913 W. York St, Phila, Pa.

Pawtucket Dyeing & Bleaching Co, Pawtucket, R. I.

Perseverance Dyeing Co, Woonsocket, R. I.

Elevators.

Cohoes Foundry & Machine Co, Cohoes, N. Y.

Graves Elevator Co, Rochester, N. Y.

Penn Elevator Engineering Co, 516 Commerce St, Phila, Pa.

Salem Foundry & Machine Shop, Salem, Mass.

Engineers, Mechanical.

Evans, Thos, 75 Westminster St, Providence, R. I.

Ferguson, John W, Paterson, N. J.
Frenzel, A. B, Sr, 33 Broadway, N. Y
Hunting, Alfred A, 178 Devonshire St, Boston, Mass.

Engravers for Fabric Printers.

Hope, John & Sons, Eng. & Mfg. Co, Elmwood, Providence, R. I.

Engraving on Wood.

Russell, Albert C, 38 Pearl St, Boston, Mass.
Ryder Co, J. J, 210 Westminster St, Providence, R. I.

Factory Sites.

Dolge, Alfred, Dolgeville, N. Y.
Bartholomew, J. B, Topeka, Kas.
Harmon, J. W, Oldtown, Me.

Feeders.

Atlas Mfg. Co, Newark, N. J.
Harwood, Geo. S, & Son, 7 Water St, Boston, Mass.

Feed Water Heaters.

National Pipe Bending Co, 68 River St, New Haven, Conn.
Whitlock Coil Pipe Co, 67 South St, Elmwood, Conn.

Feed Water Pumps.

Phœnix Iron Foundry, Providence, R. I.

Filters.

New York Filter Co, 145 Broadway, N. Y.

Fire Doors.

Coburn Trolley Track Mfg. Co, Holyoke, Mass.

Fire Pails.

Lincoln, Levi, Worcester, Mass.

Fire Pumps.

Holyoke Machine Co, Holyoke, Mass.

Fluted Rolls.

Cohoes Foundry & Machine Co, Cohoes, N.Y,
Thurston, A. G, & Son, Box 528, Fall River. Mass.

Flier Pressers.

Hall, F. A. & P, Lawrence, Mass.
Thurston, A. G, & Son, Box 528, Fall River, Mass.

Friction Clutches.

American Tool Machine Co, Boston, Mass.

Gear Cutting Machine.

Blaisdell, P, & Co, Worcester, Mass.
Whiton, The D. E, Co, New London, Conn.

Heating.

See Ventilating.

Hydro Extractors.

Am. Tool & Machine Co, Boston.

Index.

Burr Index Co, 336 Asylum St, Hartford, Conn.

Jute Goods, Burlaps and Jute Yarns.

Rogers, Gorham & Co, 20 Federal St, Boston, Mass.
Wilmington Mills Mfg. Co, Wilmington, Del.

Knit Goods Brushers.

Franz & Pope Knitting Machine Co, Bucyrus, O.
Jones, Lewis, Bristol, Pa.

Knit Goods Edgings, Trimmings, etc.

Cheney Bros, Silk Goods, 479 Broome St, N. Y.
Friedberger, S, Edgings, Germantown, Phila, Pa.
Hepner & Howitz, Lacings, 84 Leonard St, N. Y.
Loth, Joseph & Co, Ribbons, 65 Greene St, N. Y.

Knit Goods Finishing Machines, Crochet, Etc.

Champion Sewing Machine Co, 1819 N. 5th St, Phila, Pa.
Merrow, J. B, & Sons, Hartford, Conn.
Nye & Tredick, 606 Arch St, Phila, Pa.
Scott & Williams, 2077 E. Cumberland St, Phila, Pa.

Knitting Machine Cylinders.

Paxton & O'Neill, 129 Bread St, Phila, Pa.

Knitting Needles.

Breedon, Wm, & Son, Amsterdam, N. Y.
Corey, Wm, Co, Manchester, N. H.
Ives, Loyal T, New Brunswick, N. J.
Lydall, H, & Foulds, Manchester, N. H.
Star Needle Co, New Britain, Conn.
Treat, Orion, Manchester Green, Conn.
Wardwell Needle Co, Lakeport, N. H.

Knitting Machinery.

Am. Tool & Machine Co, Boston, Mass.
Branson Machine Co, 506 St. John St, Phila, Pa.
Brinton, Denny & Co, 213 Race St, Phila, Pa.
Campbell & Clute, Cohoes, N. Y.
Champion Sewing Machine Co, 1819 N Fifth St, Phila, Pa.
Crane Mfg. Co, Lakeport, N. H.
Franz & Pope Knitting Machine Co, Bucyrus, O.
Hepworth & Co, Lehigh Ave and Mascher St, Phila, Pa.
Jones, Lewis, Bristol, Pa.
Keystone Knitting Machine Mfg. Co, 1716 No. Fifth St, Phila, Pa.
Lamb Mfg. Co, Chicopee Falls, Mass.
Leighton Machine Co, Manchester, N. H.
National Automatic Knitter Co, 728 Cherry St, Phila, Pa.
Novelty Knitting Machine Co, Lowell, Ms.
Nye & Tredick, 606 Arch St, Phila, Pa.
Paxton & O'Neill, 129 Bread St, Phila, Pa.
Pepper Mfg. Co, Lakeport, N. H.
Scott & Williams, 2077 E. Cumberland St, Phila, Pa.
Stafford, W, & Co, Little Falls, N. Y.
Taylor, James, 835 Arch St, Phila, Pa.

Knitting and Sewing Machine Repairs.

Hilborn, H. G, 523 Arch St, Phila, Pa.

Laboratory Outfits.

Queen & Co, Phila, Pa.

Lingoes.

Miller Mfg. Co, 16 Indiana Ave, Phila, Pa

Looms.

Crompton Loom Works, Worcester, Mass.
Furbush, M. A, & Son Co, Phila, Pa.
Kilburn, Lincoln & Co, Fall River, Mass.
Mason Machine Works, Taunton, Mass.
Whitin Machine Works, Whitinsville, Ms.

Loom Picker Manufacturers.

Barlow, John W, Specket Mill, Lawrence, Mass.

Loom Stop Motion.

Tucker Stop Motion Co, Hartford, Conn.

Lubricators

Dixon, Jos, Crucible Co, Jersey City, N. J.
Faul, W. J, 120 Liberty St, N. Y.

Lumpers.

Gerry, George, & Son, Athol, Mass.

Machinery Dealers.

Arnold, Geo. W, Troy, N. Y.
Clark, Jeremiah, Lowell, Mass.
Godfrey's, L, Textile Machinery Agency, 26 Exchange Place, Providence, R. I.

Machinists' Tools.

Blaisdell, P, & Co, Worcester, Mass.
Whiton, The D. E. Co, New London, Conn.

Machinery Wipers.

American Silk Mfg. Co, 311 Walnut St, Phila, Pa.

Measuring and Folding Machines.

Elliott & Hall, 514 Harmon St, Worcester, Mass.

Mails.

Walder, J, Paterson, N. J.

Mill Builders and Engineers.

Ferguson, John W, Paterson, N. J.

Mill Supplies.

American Supply Co, Providence, R. I.
Buckley's, Benj. Son, Gun Mill, Paterson, N. J.

Covel & Osborn, Fall River, Mass.
Davis & McLane Mfg. Co, 90 Pocasset St, Fall River, Mass.
Gowdey, J. A, & Son, Providence, R. I.
Hay, James H, & Co, Pawtucket, R. I.
Hill, Jas, Mfg. Co. Providence, R. I.
Miller Mfg. Co, 16 Indiana Ave, Phila, Pa.
Spofford, Wm. S, & Son, 234 Chestnut St, Providence, R. I.
Thurston, A. G, & Son, Fall River, Mass.

Napping Machines.

American Napping Machine Co, Williamstown, Mass.
Parks & Woolson Machine Co, Springfield, Vt.

Oilless Bearings.

N. American Metalline Co, 62 W. Ave. and 3rd St, Long Island City, N. Y.

Pantagraphs, Engraving Machinery, Etc.

Hope, John, & Sons Eng. & Mfg. Co, Elmwood, Pronidence, R. I.

Paper Tubes.

McCausland, J, 33 Canal St, Providence, R. I.

Patent Solicitors.

Crosby & Gregory, 34 School St, Boston, Mass.
Miller, Jos. A, & Co, Butler Exchange, Providence, R. I.
Planta, E, 27 School St, Boston, Mass.
Wright, Brown & Quinby, Exchange Bldg, Boston, Mass.

Penstocks.

Dalrymple, Geo, Fair Haven, Vt.

Pneumatic Conveying.

See Ventilating.

Power Transmitting Machines.

Am. Tool & Machine Co, Boston, Mass.
Cresson, Geo. V, Co, 1800 Allegheny Ave, Phila, Pa.
Holyoke Machine Co, Holyoke, Mass.
Kilburn, Lincoln & Co, Fall River, Mass.
McKerrow, H. G, & Co, 620 Atlantic Ave, Boston, Mass.

Presses, Hydraulic.

Holyoke Machine Co, Holyoke, Mass.

Presses, Knit Goods.

Crawford, J. J, & Son, Nashua, N. H.
Taylor, James, 835 Arch St, Phila, Pa.

Presses, Steam Cloth.

Miller Press & Machine Co, Woonsocket, R. I.

Reed and Harness Manufacturers.

American Supply Co, Providence, R. I.
Huston, Wm, 46 Clifford St, Providence, R. I.
Walder, J, Paterson, N. J.

Ring Travellers.

Hay, Jas. H, & Co, Pawtucket, R. I.

Ribbons.

Loth, Jos. & Co, 65 Greene St, N. Y.

Roll Coverers.

Barlow, John W (worsted rolls), Lawrence, Mass.
Davis & McLane Mfg. Co, 90 Pocasset St, Fall River, Mass.

Roving Cones and Sheet Metal Work for Mills.

Hill, Jas, Mfg. Co, Providence, R. I.
N. E. Ventilating & Heating Co, 930 Manton Ave. Providence, R. I.

Scales

How, F. B, 216 Purchase St, Boston, Mass.
Troemner, Henry, 710 Market St, Phila, Pa.

Schools.

Philadelphia Textile School, Broad and Pine Sts, Phila, Pa.
The Correspondence School of Mechanics & Industrial Sciences, Scranton, Pa.

Sewing Machines and Supplies.

Champion Sewing Machine Co, 1819 N. 5th St, Phila, Pa.
Frame, Gibbons, 2nd and Diamond Sts, Phila, Pa.
Goodwin, J. C, 523 Arch St, Phila, Pa.
Nye & Tredick, 606 Arch St, Phila, Pa.
Scott & Williams, 2077 E. Cumberland St, Phila, Pa.

Shell Rolls.

Cohoes Foundry & Mach. Co, Cohoes, N. Y.
Thurston, A. G, & Son, Box 528, Fall River, Mass.

Silk, Silk Yarns, Threads and Silk Goods.

See Ready Reference List.

Singe Plates.

New Bedford Copper Co, New Bedford, Ms.

Size.

Cottonade Chemical Co, Mill and Hancock Sts, Germantown, Phila, Pa.
McKerrow, H. G, & Co, 620 Atlantic Ave, Boston, Mass.
Eastwood & Co, Broadway, Fall River, Ms.

Skylights.

Lupton's, David, Sons, Kensington, Phila, Pa.

Soaps.

American Soap & Washolene Co, Cohoes, N. Y.
Draper, J. O, & Co, Pawtucket, R. I.

Spindles.

Buckley, Benj's, Sons, Gun Mill, Paterson, N. J.
Draper, Geo, & Sons, Hopedale, Mass.
Hall, F. A. & P, Lawrence, Mass.
Providence Machine Co, Providence, R. I.
Spofford, W. S, & Son, 234 Chestnut St, Providence, R. I.
Westcott, A. A, & Sons, Hopedale, Mass.
Whitin Machine Wks, Whitinsville, Mass.

Spinning Cylinders.

Hill, Jas, Mfg. Co, Providence, R. I.
N. E. Ventilating & Heating Co, 930 Manton Ave, Providence, R. I.

Spinning Rings.

Draper, Geo, & Sons, Hopedale, Mass.
Whitinsville Spinning Ring Co, Whitinsville, Mass.

Spinning Tubes.

Buckley, Benj's. Son, Gun Mill, Paterson, N. J.
Providence Machine Co, Providence, R. I.
Spofford, W. S, & Son, 234 Chestnut St, Providence, R. I.

Spools, Bobbins, Shuttles, etc.

Boynton Mfrs. Supply Co, 299 Devonshire St, Boston, Mass.
Vermont Spool & Bobbin Co, Burlington, Vt.

Steam Boilers.

Frick Company, Waynesboro, Pa.
Sargent, J. Bradford, 8 Oliver St, Boston.

Steam Boiler Arch Plates.

Olsen, Chas, 562 W. 25th St, N. Y.

Boiler and Pipe Covering.

Dalbert Engineering Co, New Orleans, La.
Keasbey & Mattison Co, Ambler, Pa.
Keasbey, Robt. A, 54 Warren St, N. Y.
Morgan, W. B, Builders Exchange, Washington, D. C.
Nightingale & Childs, 134 Pearl St, Boston, Mass.
Watson, H. F, & Co, Erie, Pa.

Steam Boiler Insurance.

Hartford Steam Boiler Inspection & Insurance Co, Hartford, Conn.

Steam Damper Regulators.

D'Este & Seely Co, 29 Haverill St, Boston, Mass.
Locke Regulator Co, Salem, Mass.

Steam Engines.
Frick Co, Waynesboro, Pa.
Evans, Thos, 75 Westminster St, Providence, R. I.
Sargent, J. Bradford, 8 Oliver St, Boston, Mass.

Steel Castings.
Chester Steel Castings Co, 407 Liberty St, Phila, Pa.

Steel and Iron Roofing.
Chattanooga Steel Roofing Co, Chattanooga, Tenn.

Tanks, Tubs and Vats.
Brabender, Chas, & Son, Paterson, N. J.
Burkhardt, Wm. H, & Co, 240 Chestnut St, Phila, Pa.
Caldwell, W. E, Co, Louisville, Ky.
Corcoran, A. J, 11 John St, N. Y.
Hall, Amos H, No. 2nd above Cambria, Phila, Pa.
Oat, Jos, & Sons, 232 Quarry St, Phila, Pa.

Tank Bolt Protector.
Burkhardt, Wm. H, & Co, 240 Chestnut St, Phila, Pa.

Teasels.
Kellogg, Thos. C, Skaneateles, N. Y.
Kellogg, Wm, W, Skaneateles, N. Y.
McLaughlin Bros, Skaneateles Falls, N. Y.

Tentering Machines.
See Dyeing, Bleaching Machinery, Etc.

Tension Pulleys.
Lupton, David's, Sons, Kensington, Phila, Pa.
N. E. Ventilating & Heating Co, 930 Manton Ave, Providence, R. I.
Spofford, Wm. S, & Son, 234 Chestnut St, Providence, R. I.

Testing Machines for Yarn and Cloth.
How, F. B, 216 Purchase St, Boston, Mass.

Trolley Tracks.
Coburn Trolley Track Manufacturing Co, Holyoke, Mass.

Twines.
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Valves.
D'Este & Seeley Co, 29 Haverill St, Boston, Mass.
Locke Regulator Co, Salem, Mass.

Ventilating Apparatus.
Boston Blower Co, Boston, Mass.
McKerrow, H. G, & Co, 620 Atlantic Ave, Boston, Mass.
New England Heating & Ventilating Co, Providence, R. I.
Philadelphia Textile Machinery Co, Hancock St, above Lehigh Ave, Phila, Pa.

Water Towers.
Caldwell, W. E, Co, Louisville, Ky.

Water Wheels.
Burnham Bros, York, Pa.
Christiana Machine Co, Christiana, Pa.
Holyoke Machine Co, Holyoke, Mass.
Swain Turbine Mfg. Co, Lowell, Mass.

Water Wheel Governors.
Am. Tool & Machine Co, Boston, Mass.
Cohoes Foundry & Machine Co, Cohoes, N. Y.

Watchman's Clock.
Pneumatic Watchman Clock Co, Columbus, O.

Wool.
See Ready Reference List.

Wool Combs.
Tonwsend, Thos, Manchester, Conn.

Wool Combing Machinery.
Crompton Loom Works, Worcester, Mass.

Wool and Waste Dusters.
Gerry, Geo, & Son, Athol, Mass.
Stillman-Rich Machine Co, Westerly, R. I.

Woolen Machinery.
Altemus, W. W, & Co, 2816 N. 4th St, Phila, Pa.
Atlas Mfg. Co, Newark, N. J.
Davis & Furber Machine Co, N. Andover Depot, Mass.
Furbush, M. A. & Son Machine Co, Phila, Pa.
Harwood, Geo. S, & Son, 7 Water St, Boston, Mass.
Parker, J. B, Machine Co, Clinton, Mass.

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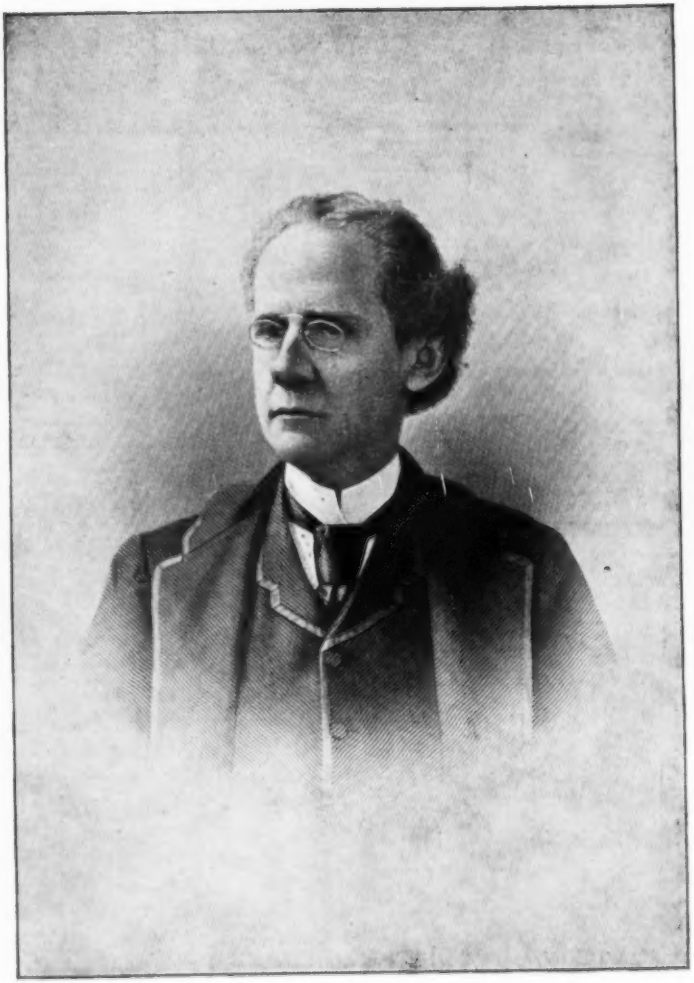

Thomas B. Bryan

TEXTILE WORLD.

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THOMAS DOLAN.

The excellent portrait of Thomas Dolan, which we present to the readers of the TEXTILE WORLD, will be pleasurably recognized by the many to whom his face is so familiar, and scanned with interest by many more to whom his name is synonymous with success in woolen manufacture.

Mr. Dolan's eminence in the field of his industry, has been gained by a life of unremitting aggressiveness in manufacturing, covering a period of thirty-three years, and is such familiar history to the manufacturing public, that we may, with propriety, omit any lengthy detail of his career.

In 1861, he established the celebrated Keystone Knitting Mills, of Philadelphia, which manufactured fancy knit goods and hosiery. Five years later he inaugurated a new industry by the introduction of fine worsted yarns in the manufacture of their goods, especially Berlin shawls, which branch of the business quickly ran up to more than a million dollars output. The varying fashions and customs of trade were followed by the mill, season by season, and new machinery and fabrics were promptly introduced to keep pace with such changes. In 1875, men's fancy cassimeres and ladies' cloakings were added to their, then widely extended, production increasing the combined manufacturing interests of the Keystone Knitting Mills to proportions of great magnitude.

In 1878, Mr. Dolan decided to quit the manufacture of hosiery, and four years later the manufacture of knit goods was also given up—thus both the earlier branches of the great mills were discontinued to give place to the production of men's wear of the best quality.

The entire plant, which had a modest beginning, now covers six acres, at and near the junctions of Hancock and Oxford streets, and Columbia Ave., Philadelphia. The number of men, boys and girls, who find steady employment in the combined works, runs into the thousands, and no enterprise within the limits of the great manufacturing districts of Philadelphia, enjoys more enviable repute for liberality, reasonable hours, and humane consideration to its employes, than is shown for those whose names are on the long pay roll of the Dolan mills.

Thomas Dolan was born in Montgomery County, Pennsylvania, October 27th, 1834. He began the struggle of life unaided by inherited wealth, and reached his place of present distinction by single handed endeavor. He is in the true sense a self-made man, and, until the cares of his successful ventures grew beyond his personal control, con-

ducted business alone. The rapid strides of his business, resulting largely from the favorable reputation of the Dolan fabrics, rendered it impossible for one man, however energetic and capable, to master the endless details of such a manufactory, and Mr. Dolan early found it necessary to associate with him a partner who would share the burdens and meet the complications of such a varied industry. Later changes in management were also found necessary, owing to increasing business, and a company was finally formed with Mr. Dolan as chief supervisor of the business. Mr. Rynear J. Williams, Jr., Mr. Chas. H. Salmon and Mr. Joseph G. Truitt, complete the company's personel.

Mr. Dolan's connection with other interests and institutions—commercial, financial and political—shows interestingly his remarkable mental and physical resources, as well as his versatility of talent. In the various clubs, corporations and banks, in which he is interested, he acts a part which is much more than ornamental. He is president of the Quaker City Dye Works Co., Philadelphia, an extensive and successful enterprise. He was for many years president of The Manufacturers Club, Philadelphia, one of the strongest and wealthiest organizations of its kind in America, and but very recently surrendered that honor under the strong and almost irresistible protest of the whole membership. A splendid banquet was tendered Mr. Dolan by the club upon his retirement, and the occasion was marked by graceful expressions of friendship, good wishes and regrets.

As president also of The Textile Dyers Association, Mr. Dolan is brought into intimate contact with that fraternity. He is vice-president of the National Association of Wool Manufacturers, one of the vice presidents of the famous Union League Club, of Philadelphia, trustee of the Pennysylvania Museum of Industrial Art, director of The Merchants National Bank, Delaware Mutual Insurance Co., United Gas Improvement Co., Brush Electric Light Co., Philadelphia Traction Co., School of Design for Women, and the University Hospital.

Mr. Dolan is in the prime of life, as clearly shown by his portrait, and his regular routine of business is followed with all the interest of earlier days. He observes office hours with regularity, and counts no detail too insignificant to note. "His presence about the works," remarked a young man recently "is an inspiration to the best performance of duty."

—We have received from the Boston Mfg. Co., of Waltham, Mass., a picture of their immense plant. It is, however, neither a photograph, engraving, etching or painting, but made in their own mill on a Jacquard loom after the design of Treasurer Goodale. Some of the statistics of this picture are extremely interesting. There are 8,028 cards used in the design, containing 2,155,000 holes. These cards if placed end to end would be 2 1-10 miles long, and cover an area of 3,268 square feet, weighing 418 pounds. The picture, which is 23 1-2x13 in., required 1 8-10 miles of single length of yarn for each picture, 100 square feet of design paper was necessary, and this immense length of yarn and intricacy of design was woven in sixty minutes for each picture. At the World's Columbian Exposition and several other fairs we have seen small representations of buildings and different views produced on the jacquard loom, but do not remember ever to have seen such an elaborate and well executed woven picture as this. This concern is now producing a large line of swivel silks, fine colored fabrics and silk ginghams, in addition to their other well-known fabrics.

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The Tariff.

The outlook at this writing is, that the tariff bill as it passed the Senate, and now accepted by the House, will become a law; those who have been fighting President Cleveland in his efforts to secure a lower range of duties having triumphed. The House found it necessary to recede from its former attitude of disagreement with the Senate, the idea of the lower body being that it must be the Senate bill or no bill at all. The President will probably allow the bill to become a law. The textile schedule will thus remain as it was when it left the Senate, and in this particular the outcome has been as we predicted in our last issue, in which we took the position that the fight would be principally on coal, iron and sugar, and that the textile rates would not be materially amended in the House.

The resolution that the House recede from its position and accept the Senate bill, also included a provision placing barbed wire, sugar, coal and iron ore on the free list by a series of separate bills, which will, of course, if acted upon at all by the Senate, be considered as distinct measures of themselves. While a further agitation of the tariff on iron and coal may have an adverse effect on those industries, the settlement of the tariff question so far as it pertains to the woolen and cotton industry, will be hailed with relief by all of our readers, whatever may be their views. The bill in itself is an incongruous, inconsistent, unfair piece of legislation—a piece of botch-work.—but an end of this agitation, however drastic may be the provisions of the bill, is preferable to the continued discussion and the paralyzing uncertainty which has so long prevailed, in consequence of which manufacturers have not known what to do.

Direct Trade With South America.

If our reciprocity treaties with the Latin-American countries, could only be held in force for a number of years longer, there is little doubt that a very large business could be worked up in that profitable field for cotton goods. As long as American merchants attempt to transact business with those countries at arm's length, so to speak, through English and native agents, there is little hope of making much headway. When they once begin to send their own travelling men direct to the local buyers, and thus come closely in touch with them and state their requirements, there is hope for a rapid extension in this field. A letter from a New York exporter to a Southern mill, indicates that this sort of business is now being done with every prospect of success. This exporter writes:

"We have three men travelling in South America. They haven't been there long, but it is already evident that there is the opportunity to build up an extensive business down there. We intend to keep up our efforts and expect

to find an outlet for large quantities of goods in the export trade to the south of the equator.

"There are many goods made in the southern states that will just fit this South American trade, and our southern friends seem to take more interest in this subject and to be more willing to meet the requirements as to kinds of packages and styles of goods that are suitable, than the manufacturers of New England are."

Style Suggestions for Woolen Manufacturers.

The long deadlock on the tariff question has delayed the opening of spring lines, and although a great many lines are all ready to show, they are held back, because there has been no basis to figure cost of wool by which to regulate prices on goods.

Quite a number of lines have been shown, and some few orders taken on value,—that is, the orders have been placed by the customer with the understanding that the price would be regulated according to the market value of wool. The manufacturers who show goods at this time, with prices made according to the present price of wool, etc., unless they have bought enough wool to cover their production, are liable to come out of the small end of the hour.

Greely, Frost & Cushman is the only house in New York which has shown their complete line, and they took orders up to a certain point, and then withdrew their line when wool went up in Boston, the first part of August. This rise in wool was doubtless occasioned by certain parties buying it for speculative purposes, on the assumption that no matter what Congress did the price was going up.

Almost all the western lines of "all wool" goods, such as the Reedsburgs, Springfields, Varibo and Columbias, are taking orders with a reduction of fifteen to twenty per cent. over last years prices. The Reedsburg Woolen Co., of Reedsburg Wis., sold their goods in 1893, for $1.32½ per yard, this year they are taking orders at $1.20, regular terms, or at $1.00 net 60 days.

Mc Intosh, Green & Co. are showing the line of Milldales at 30 and 35 cents per yard; a year ago they sold for 40 and 42½ cents.

The Premiers sold by Gowing, Sawyer & Co., are at 35 less 5 per cent; they were 40 cents in 1893. Abbott's tricots, sold by O. H. Hayes & Co. are $1.15 less 12½ per cent, which makes them a fraction of a cent over one dollar a yard; they were $1.15 straight in 1893. Frost's cheviots, which sold in 1893 for 80 cents, are being sold at 75 cents.

The foregoing are about all the fabrics which have yet been placed on the market, and by these changes in prices a general tendency of the market can be obtained.

A great many black and blue serges are being demanded, and a line which will sell very cheap, say for about 65 cents, will be a great seller. The prices in this class of goods will range upward; the lighest weight should be a fabric which will weigh about 12 ounces.

The Saxony finish goods will be sold, as they are a change from cheviots and cassimeres, and should be all wool and have a smooth soft face, with quite a nap.

Fancy worsteds should be made as neat as possible and, in the main, should be in dark and medium colors.

Improvement in Treasury Finances.

For the first time in several months, the July statement of the United States Treasury, issued August 1, shows an actual net gain in the cash balance of about a million and a half dollars. The statement issued July 1, covering the month of June, showed a loss in the cash balance of more than $270,000; and the statement for the month of May, a loss of more than $7,000,000. In every month of the fiscal year ending June 30,

in fact, there had been a deficit as the result of Treasury operations, so that at the end of the year the total deficit amounted to very nearly $70,000,000.

The favorable showing for the month of July, while quite largely due to the increased receipts from internal revenue, especially from the whiskey tax, may be accepted as marking the turn in the tide which has for so long a time adversely affected the finances of the government, and we may now reasonably look for a continued improvement in its financial status.

It should be borne in mind, that the July statement would have shown a much larger increase in the net cash balance, had it not been for the fact that expenditures for pensions were unusually heavy, and that the semi-annual, as well as quarterly, interest payments came due in that month, and reached an aggregate of more than $7,000,000. It is estimated that but for these the month would have shown a balance of more than $5,000,000, instead of $1,500,000. Such large payments will not be duplicated this month, and on other lines expenditures will be on a conservative scale, so that, although there may be a falling off in internal revenue receipts, it will have to be one of considerable magnitude to result in a deficit at the end of the month. Liberal receipts from internal revenue, however, are looked for, and customs receipts are not likely to show such a low average as has recently prevailed. Customs receipts last month were only $8,427,338, and in the month of June they were about the same; the returns for those two months showing the smallest receipts from this source, for an equal period of time, for very many years. In July, 1893, they aggregated $14,683,969. Already, so far as we have reviewed the figures for the month of August, the receipts from customs have been much above the previous average. Should the tariff question become settled between now and the first of September, receipts from customs will show a very large increase. Altogether, therefore, with a decrease in disbursements, liberal receipts from internal revenue, and indications of an increase from customs, which would assume a remarkable magnitude in case of an early settlement of the tariff question, we may reasonably look for another favorable showing for the current month.

Another factor which will operate favorably on our finances, will be the crops in the near future, and the export movement of cotton, grain, etc., which will have a tendency to check exports of gold. As far as the gold balance is concerned, which is down to about $53,000,000, it need occasion no alarm. There is little question as to the Secretary's power to acquire all the gold that he needs. The point to be borne in mind is, that, for the first time in many months, the Government's receipts are exceeding its expenditures, and that its cash balance is likely to increase. Unless some unforseen calamity should overtake us, we are not likely to witness another deficit such as we have been in the habit of seeing during the fiscal year ending June 30, 1894. The new fiscal year has started off well, and present conditions, so far as they can be accepted as indicating anything, point to a continued improvement.

As showing how, until recently, the Government's situation had been working from bad to worse, the following figures are given. The gross revenues of the government for the last fiscal year were only about $297,000,000, or about $89,000,000 less than for the preceding year. Expenditures were about $366,500,000, or $69,500,000 in excess of receipts. Only four years before there had been an annual surplus of more than $100,000,000. The enormous increase in pensions, however, and other increased expenses began to make themselves felt, and for the year ending June 30, 1891, the excess of receipts

over expenditures was less than $27,000,000; in 1892, the balance had dwindled down to less than $10,000,000 for the fiscal year ending June 30, 1893, it was only $2,341,675; and for the last fiscal year, as before shown, this had become converted into an enormous deficit of nearly $70,000,000.

The New Seaconnet Mill.

In conversation with a gentleman closely connected with Fall River and Providence mill affairs, some remarks were made on the action of the directors of the Seaconnet Mills in voting to build a new mill at this time.

This gentleman agreed with us that there were other reasons besides an indication of general manufacturing prosperity in their action. To be sure, the Seaconnet has always been a good dividend earner, and, if we are not mistaken, this mill has always been crowded to the very top notch of production, with expectation that the deterioration of machinery would be at a much greater ratio than if it were running at ordinary speed, and full realization of the fact that a new outfit would be required in less time than if such were not the case. If a renovation of the plant or an enlargement was to be undertaken, there probably would never be a time when it could be done at such an extremely low cost at present. The builders of machinery are not running to anywhere near their full capacity, and are anxious for orders, while the price of raw material and labor is at bed rock, and taking everything into consideration, it seemed advisable to undertake this work at the present time. Surely the directors were wise in so doing, as we firmly believe they have saved to the corporation thousands of dollars over what would have been required had the work been two years ago, or was to be postponed for an equal length of time.

Although the free trade party may cite this new mill as an evidence of better times in the cotton manufacturing business than has been supposed, those in the trade appreciate the true facts of the case.

Small Stocks of Clothing.

The Clothiers & Haberdashers' Weekly recently made a very thorough canvass of the wholesale and retail clothing dealers for an expression of opinion concerning the business prospect in that line, and present stock of goods.

The wholesalers all write in a very encouraging vein. Many report that business has already taken on a much better look, and that their orders are quite satisfactory. The generally expressed opinion is that the moment the tariff question is settled there will be a radical improvement, and while perhaps the full benefit will not be felt this fall, owing to the uncertainty of getting their duplicate orders filled, next season should witness a very brisk trade.

The hard times the past year have brought about a demand for a cheaper grade of clothing, and it is in the medium and low priced lines that trade is most active. The reports from retailers indicate small stock of goods on hand. Southern and Western merchants speak very cheerfully of their business for the past few months. In the large centres especially, stocks are low.

—George M. Fleming, the yarn merchant of Philadelphia, returned July 14th from an extended trip abroad. In the English yarn markets he found the same general depression that we have experienced.

—Somerset & Co. is a new carpet yarn firm at Manayunk, Pa. The senior member is a well known yarn man, for some years connected with the firm of Seville Schofield & Co., and the "company" is a younger member of the Kenworthy family, also widely known in Philadelphia yarn circles.

—Joseph Schofield, for Seville Schofield & Co., and son of Sevill Schofield, is looking after the trade of Kensington, Philadelphia, succeeding in these duties Mr. Wm. Somersett who lately withdrew from the firm. Mr. Schofield, Jr. is well posted in worsted, woolen, and carpet yarns, and is an expert judge of wools.

New Machinery and Processes Coming on the Market.

Items for this department are inserted without regard for advertising patronage or money consideration. We want them as news, and any one sending such particulars will confer a favor on the editor. The statements made are claims, and must not be understood as officially endorsed by the editor.

Workman's Time Recorder.

The Standard Time Recorder Co., 10 and 12 Federal St., Boston, are placing on the market a machine which is complete in itself, which records the time of arrival and departure of workmen. This is an autographic machine, and the price is very reasonable, so that the machine can be placed in the several rooms or departments of a mill to great advantage, thus recording the time when the workman actually arrives at the room in which he is employed. It seems obvious that an autographic machine, while requiring more time, and hence a larger number of machines for the proper registering, provided that the price is satisfactory, would be of decidedly greater advantage placed in each department than a single machine placed at the office or gate entrance, in which to deposit checks, which might not signify the time at which the workmen arrived at their rooms or departments, and were actually ready to begin work under the overseer's eye.

Automatic Hosiery Knitting Machine.

Scott & Williams, 2079 E. Cumberland St., Philadelphia, are bringing out their new system of automatic seamless hosiery machinery, which has been in process of perfection for the past five or six years, and although many of them have been introduced and are now successfully running in this country and in England, the line is for the first time formally introduced to the trade in this issue of the Textile World, and will be found described at length in another part of the paper.

New Rib Machine.

The National Automatic Knitter Co., 724 Cherry St., Philadelphia, are sole agents for the Appleton Automatic Machinery Co., which controls the Appleton patents for a new machine for producing wide or deep welts or hems on ribbed fabrics of all descriptions. This machine is suitable for half hose tops, misses' and ladies' hose, sleeves, cuffs and similar products. The welt or hem can be made of any desired depth. Illustration of the product and further description of the machine will be found on other pages of this issue.

Special Sewing Machine.

The Union Special Sewing Machine Co., of Chicago and New York, have just brought on the market their side wheel, cylinder, twin needle machine, especially adapted for trimmed seams on knitted fabrics. This machine is illustrated and described at further length on other pages.

New Doyle Separator.

George Draper & Sons, Hopedale, Mass., are bringing out a new pattern of the Doyle separator, which, while specially designed to meet a demand for low cost device, has many points of merit to recommend it. It is illustrated and described elsewhere in this issue.

Cloth Steamer.

The Davis & Furber Machine Co., North Andover, Mass., are putting a new cloth steaming machine on the market which we expect to illustrate in a later issue.

—British capitalists who have recently been impressed with the advantages of locating factories near the sources of supply of raw material, are about to establish a factory at Cairo, in Egypt, with 18,000 ring spindles and 500 looms of the latest pattern. The Khedive has authorized the undertaking, and the movement will be watched with great interest, as, in the event of its success, it will doubtless mean the establishment of other factories which will in a great measure supply the Egyptian demand for cotton fabrics; that trade is now controlled in Manchester, England.

A New System of Automatic Seamless Hosiery Machinery.

It gives us great pleasure to call attention to the new system of automatic seamless hosiery machinery, as built by that well-known firm of knitting machine builders, the Messrs. Scott & Williams, of Philadelphia. This is the first time that a cut and description of this machine has appeared in any journal and we are enabled to present this to our readers through the kindness of Messrs. Scott & Williams who have afforded every facility to a representative of this journal to compile the facts.

For the past five or six years this firm has been building this class of machinery, a fact not generally known to the general public, and several thousands of such machines are now at work with a few leading concerns in this country, and with all the best concerns in England and on the Continent. So great was the demand for these machines abroad that it became necessary to build them there, and arrangements were consummated with the Messrs. George Blackburn & Sons, of Nottingham, England, undoubtedly at the head of the knitting machinery builders of the world, to manufacture and distribute them in England and on the Continent. So well have these builders performed their part that these American machines have been introduced into every important centre throughout the world.

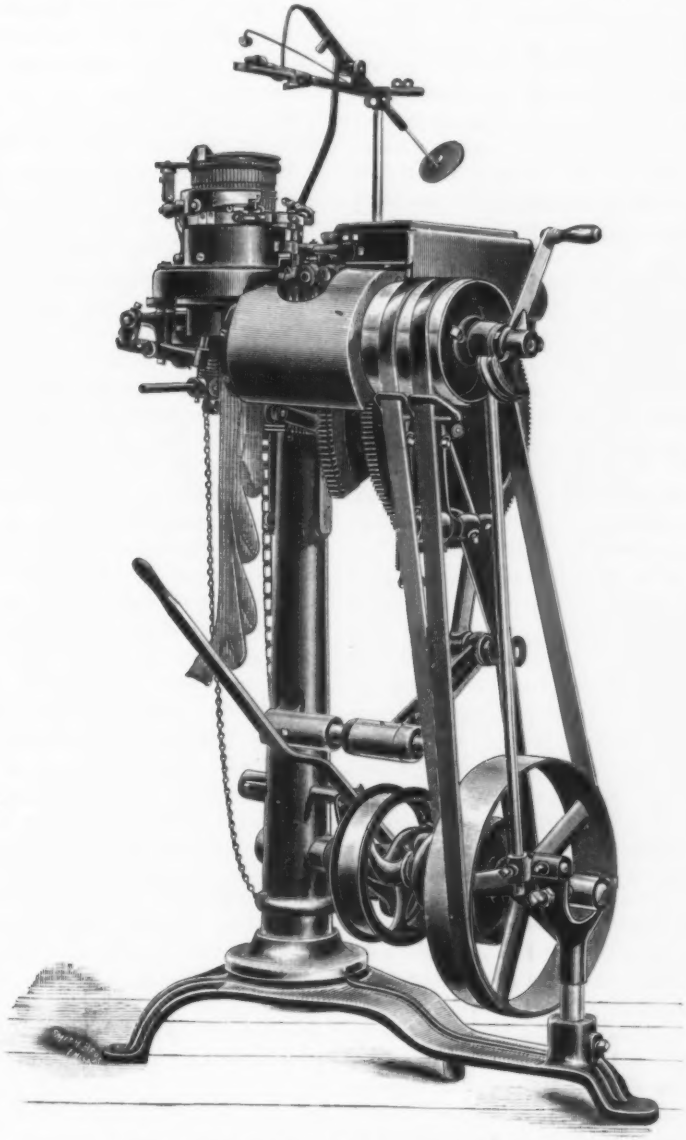
It is worthy of comment that Senator Quay, of Pennsylvania, in the great tariff speech delivered by him during the debate on the pending bill, made reference to these facts in the following words:

"By reason of the existence of the knitting industry in this country and of its prosperity here, there has been a continuous demand for improved labor-saving machinery, and the minds of American inventors have been directed to the opportunity thus afforded for making profit for themselves. The result has been a wonderful development and improvement of machinery of this class. So that it is not an exaggeration to assert that the best knitting machinery in the whole world, for the manufacture of articles of wearing apparel consumed by the masses, is of American origin. So excellent is much of this machinery, and it is sold at a price so low, that there is a large and growing European demand for it. At this moment mulitudes of American knitting machines, making hosiery of the lower grades, are being operated upon the Continent of Europe, *and some of the best kinds of American machinery are built and sold in Europe by machine builders under agreement with American patentees.*"

Patents granted in 1889 and 1894, together with additional patents still pending, cover the construction of the machine we are about to describe. The essential feature of the machine is the needle-controlling mechanism in operation during the knitting of the heel and toe of a stocking. It is of course well known in the trade that this operation requires first the gradual diminution of the number of needles comprising the group or series upon which the heel or toe is be formed, one needle being thrown out of action, then another, and so on until the narrowest portion is reached, whereupon the needles are gradually returned to action, in like manner, until the original number are once more in action, when (it being understood that to and fro or reciprocating knitting has been progressing) the pouch-like heel is formed.

To accomplish this end automatically, many devices have been used, the most general of which have been positively actuated mechanisms, which in the main have been found objectionable for many reasons. The machine under consideration is constructed on a principle which permits the needles alone to control its movements. A frictionally mounted ring is carried in suitable guide ways at or near the upper edge

of the revolvable cam-ring; this ring is free to turn or to be stopped independently of the movement imparted to the cam-ring. Upon this ring are mounted two levers termed pickers, the inner ends of which extend inward far enough to engage the butts of the needles, their outer ends being under the control of a pivoted lever carrying segmental plates. One of these pickers is poised at or near the middle of its length, and has its inner end recessed or stepped; the other slides bodily in suitable guide ways.



NEW AUTOMATIC SEAMLESS HOSIERY MACHINE.

Assuming that one half, or thereabouts, of the whole number of needles in the head are thrown out of action (by means to be hereafter described), the direct moving picker is brought into contact with the butt of the first needle of the inactive set and stopped or arrested thereby, and while so arrested an upward thrust is imparted to it by the lifting lever before mentioned, whereby it is not only itself raised, but owing to the presence of the recess or step in its inner end, the needle is raised with it and thus thrown out of action; another reciprocation of the machine carries this picker to the other side where the the same action takes place, and the first needle of that side is thrown out of action. This operation is continued until all necessary needles have been thrown out of action, whereupon the segmental plates carried by the lifting lever are moved so that they engage with the poised picker, the inner end of which travels in a path immediately above the butts of the inactive group of needles. The friction ring is still stopped by the first mentioned picker being in contact with a needle butt, and the poised picker is brought into a position immediately over the butt of the first needle of the active set, and, as its outer end is lifted by the lifting lever, its inner end is depressed, which carries a needle with it; this takes place in like manner on the other side and is continued until the heel or toe is completed.

The needles are not subjected to the slightest side strain when being acted upon by the pickers, for the thrust is delivered in a direct line with the length of the needle. We think this is apparent from the above description, but an inspection of the machine in operation would make the matter self-evident.

There are no racks, screws or other positive devices for controlling the movements of the pickers, as the needles themselves serve as stops. From this it will be evident that no changes of mechanism whatever are necessary in order to effect a change of gauge, and no derangement of parts can possibly interfere with the correct and accurate operation of the needle-controlling mechanism.

The mechanism for throwing out of action *en masse* the necessary needles at the beginning of the heel or toe, is similar in its operation to that above described so far as maintaining the thrust in line with the length of the needles is concerned, and is most simple and ingenious in its construction.

Circular courses are introduced between the joints of both heel and toe, in order to ensure the lowest possible percentage of what are termed "menders." This not only accomplishes this purpose most effectually, but adds vastly to the general appearance and durability of the finished stocking. The number of courses forming these gores may be increased or diminished at pleasure.

It would be impossible in the limited space at our command to describe in detail the various other points of excellency in this unique mechanism, but we give, so far as practicable, the important features.

The splicing or re-enforcing mechanism, which is the very essence of simplicity, effectually introduces a splicing thread at any desired point. Those most familiar with the state of the art in knitting mechanism well know and continually assert that any machine to be of real value must not only be automatic in its movements but must likewise be universal, in so far, at least, that any of the three fundamental types of stockings may be made on it. This machine meets these requirements fully. It is so constructed that the needle cylinders are interchangeable and removable. Even this operation is in part effected automatically. The removal of one cylinder and the insertion of another is accomplished with greater dispatch than

is possible even in the best types of hand seamless machines. Either ladies' hose, men's half hose or children's ribbed hose, or any combination of these types, may be made and are made with equal facility on the Scott & Williams machine.

In making straight ladies' hose it is usual to slacken the fabric at the calf or from a point below the calf throughout the upper portion of the stocking. It appears that other machine builders term fabric so made "fashioned," and claim that machines that will make this kind of fabric will produce "fashioned" goods. The use of the term "fashioned" in this connection seems to us to be deceptive and misleading, and the Messrs. Scott & Williams very wisely decline to be a party to such misrepresentation, but they do claim that by a simple and direct acting device the gradual slackening of the fabric is effected, which serves to give the required room in the calf portion and when required, in heel or toe.

As to the production of machinery of this class we find many extravagant statements but we also find that the builders of the machine we are endeavoring to describe are loth to make positive statements. From their catalogue we quote the following extract and have no doubt that the figures therein given are substantially correct and are being realized by users of this machine.

"It should be understood that production is entirely governed by conditions such as gauge, size, organization and ability, upon the part of the person in charge. However, our past experience prompts us to state, conservatively, that, on ladies' goods one girl can easily attend to from 10 to 15 machines and each machine will make four (4) dozens per day of 10 hours. On men's half hose, one girl will operate from 4 to 5 machines and each machine will make five (5) dozens per day. On footed ribs one girl will run 4 machines and each machine will make from 6 to 7 dozens per day. This estimate is based on average gauges and sizes."

The machine we have above described can be seen in actual operation at the show rooms of the Messrs. Scott & Williams, S. W. Cor. 6th, and Arch Sts., Philadelphia, where also a complete plant is constantly at work on various kinds of goods. They are also in operation in many of the most prominent factories throughout the country, and duplicate orders are being constantly sent in to the builders.

Address all communications relative to these machines to the Messrs. Scott & Williams, whose main office and works are located at 2079 East Cumberland St., Philadelphia.

—George H. Holgate, of the Association American Inventors, Betz Building, Philadelphia, has on exhibit some beautiful specimens of ramie fibre. Mr. Holgate believes that a great future awaits the development of that textile, and it is said by some that he holds the key to its perfect preparatory treatment.

—Hosiery boards form an important and growing feature of business with Joseph T. Pearson, 1815-21 Taylor St., Philadelphia. Mr. Pearson is extending this trade into distant sections. Lapping boards, packing boxes and underwear boards are also largely manufactured by him.

—On a recent visit to the picturesque yarn mills of Howland Croft, Sons & Co., Camden, N. J., we were struck with the solid methods of business there, as well as the care bestowed upon the mills and reservation. The Linden Worsted Mills remind one of the celebrated Singer Co.'s factory and grounds at Elizabeth, N. J. They would well serve as a model for manufacturers who have regard for beauty and comfort amid the stolid and hardy features of mill life.

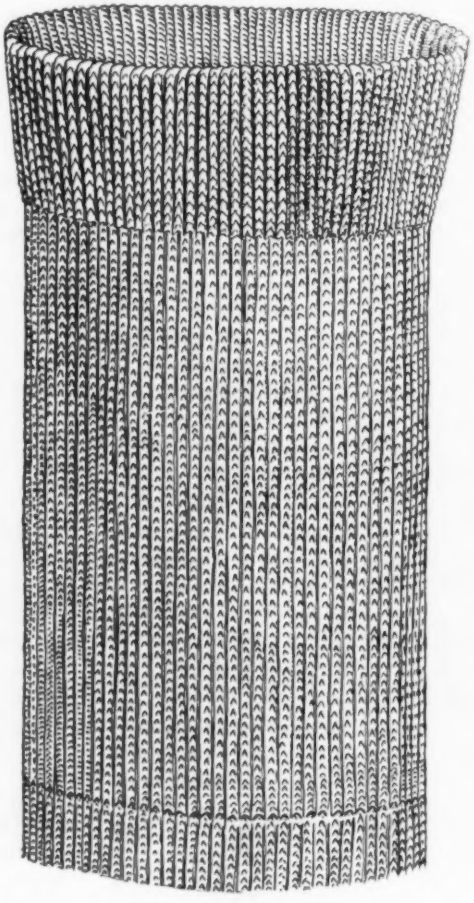
A New Rib Machine.

The Appleton Automatic Machinery Co., of Long Island City, N. Y., owners of the Chas. J. Appleton Patents Nos. 510,829, and 510,895, covering the means for producing wide or deep welts, or hems, on ribbed fabrics of all descriptions, are now prepared to offer the trade machines containing these im-provements.

This welt or hem can be made of anydesired depth, and is suitable for half-hose tops, misses' and ladies' hose, sleeves, cuffs, drawer legs, shirt borders, etc., and is claimed to be the only welt that equals the welt to be found on the best foreign goods. Appreciating the unfinished and ragged condition of the tops of so much of our domestic hosiery, the frequent complaints of the trade on this score, and the desire of domestic manufacturers to improve such conditions without adding to the cost of the finished goods, this company has, after several years of experiment and at great expense, produced a machine that is claimed to entirely overcome the troubles referred to; producing a welt entirely free from all ragged edges, danger of ravelling or tearing, and adding very much to the appearance of the goods, but adding little or nothing to the cost of manufacture.

This welt or hem is shown in the accompanying cut. Buyers to whom the finished goods have been shown, we are told, have invariably expressed their approval of the hem, and while not admitting any additional commercial value, have stated that goods with this finish would receive their preference.

These machines are built in all sizes, with any number of needles and as many feeds as the ordinary circular rib knitting machines. It is claimed they can be run at the highest possible speed with a minimum of waste and breakage of needles, as the device prevents much of such waste and breakage; they are entirely automatic in all changes. Being built by Mc Michael & Wildman,



THE APPLETON WELT.

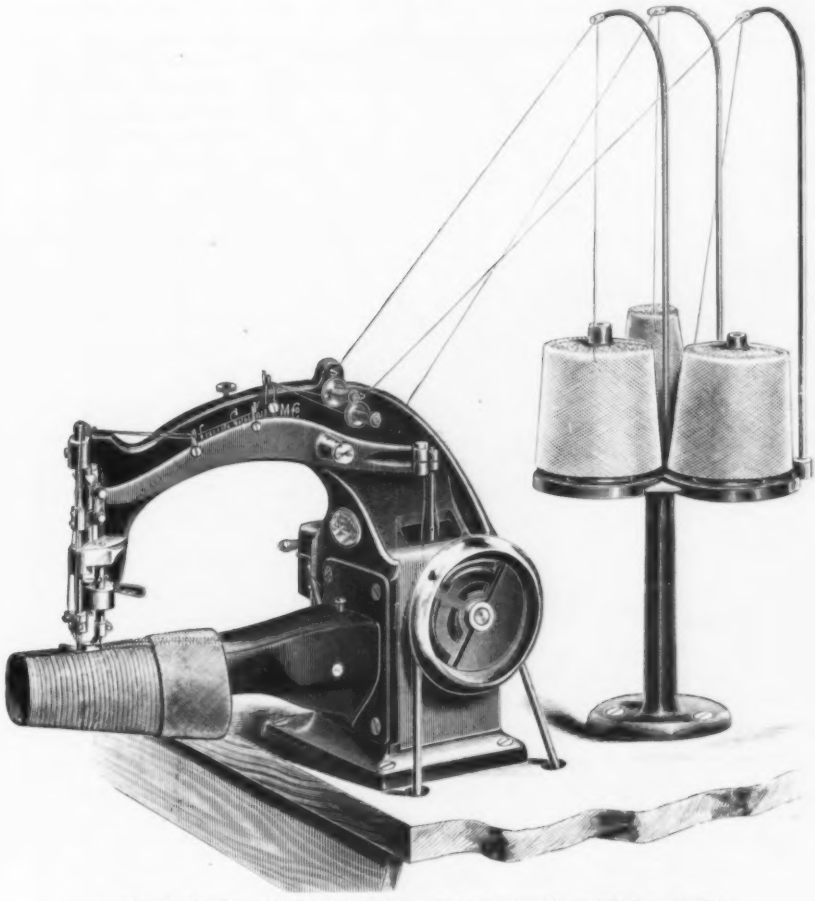
they contain all the valuable features and superior workmanship of this well known make of machines.

The device improved consists of a series of sinkers or web-holders, which act on the fabric—being knit in such a manner

as to prevent it bunching on the needles —and makes it possible to knit any number of courses on the welt. These sinkers are also of great service in case of a "press off," as it is only necessary to place the yarn in proper position and start the machine, instead of "picking on" the fabric, thus saving much time.

Side Wheel Cylinder Twin Needle Machine.

This new machine, built by the Union Special Sewing Machine Co., of Chicago and New York, is especially adapted to covering trimmed seams on knitted fabrics. Two parallel rows of stitches



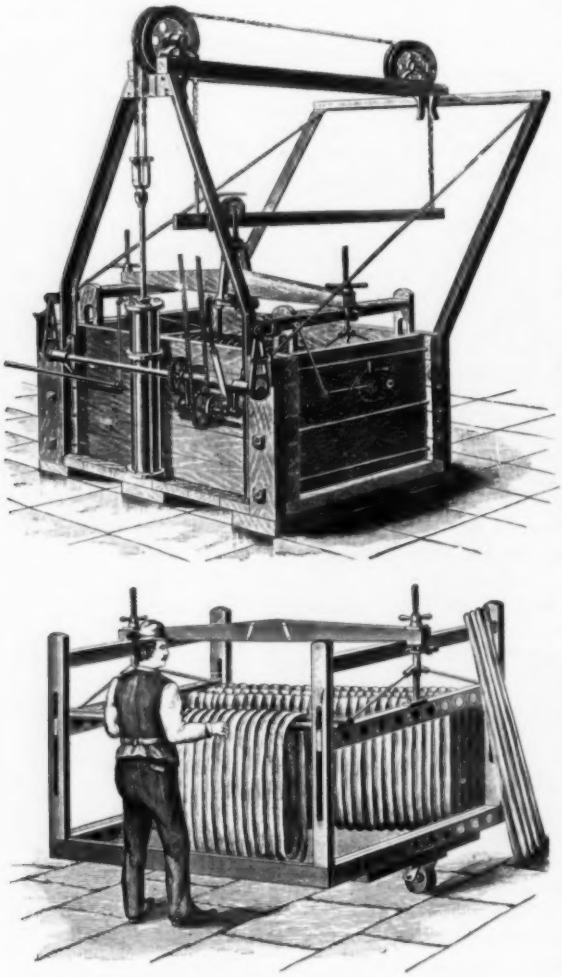
NEW SPECIAL SEWING MACHINE FOR COVERING TRIMMED SEAMS.

Manufacturers will find in these welts a most desirable finish for the tops of hosiery. The National Automatic Knitter Co., of Nos. 724-726 & 728 Cherry St., Philadelphia, have been appointed sole selling agents, and further particulars, samples and prices may be obtained upon application to them.

appear on the upper surface of the material, while on the lower side therows of stitches are interlocked by a thread which entirely covers and draws down flat that portion of the fabric beyond the seam, greatly improving the appearance of the garment, and being flat will not produce any discomfort to the wearer.

The cylinder being only 1 and 13-16 inches in diameter will allow the covering of the seams of a very small sleeve or leg.

This machine is simple and durable in its construction, and can be run at a high rate of speed. All of the Union Special Co's. machines take their thread directly from the spools and have no bobbins to wind. The side wheel cylinder twin needle machine illustrated is entirely new, and from a personal examination of its working we should pronounce it a valuable innovation in the line of machinery intended for such special work.



THE WOLSTENHOLME DYEING MACHINE.

A Practical Dyeing Machine.

The Wolstenholme dyeing machine, which we illustrate below, has already received notice from us in previous issues of the TEXTILE WORLD, but, since then, the machine has been considerably improved and is now one of the most practical dyeing machines in the market.

Having seen the machine in practical working, we can testify to its great usefulness; the patentees do not claim too much for it.

The tangling and breaking of the yarn, which frequently happens with other machines, is hardly possible with this new machine, as the yarn does not turn on sticks. The yarn is placed upon a frame, which can easily be arranged to fit any skein; the frame is so adjusted that it leaves the yarn slack on top and bottom of frame. The latter is put in motion by a hydraulic lift, and as soon as the frame is raised the yarn floats from the upper part to the lower part of the frame, and so *vice versa*. The yarn is always fully submerged in the liquor and there is hardly any possibility for uneven dyeing, tangling, or breaking of the yarn.

Each machine has two frames, one of

which is in the vat while the second frame is being filled; the filling of the frame with yarn takes very little time, in fact not one half the time that filling sticks do. With these two frames the machine can be kept constantly in operation, and turn out considerably more work than machines with sticks. The floating of the yarn from the upper part of the frame to the lower one is a very good imitation of the hand motion of turning yarn, which is superior to the action of the machines which are fitted up with wheels containing sticks.

There is no danger of spoiling yarn in the Wolstenholme dyeing machine, which there is considerable danger of doing with machines which have wheels, for it happens frequently with the latter that some of the machinery will get out of order, the wheels stop and yarn will be spoiled. This is not possible with the Wolstenholme machine.

The machine needs no belts, has no complicated machinery, needs very little power to be run; each machine has its own hydraulic lift, and is so simple that a boy can run it. It has a mechanical device which the operator sets when he enters the yarn, and which will ring a gong to draw the attention of the operator that the dyeing operation is finished. Through this ingenious device the operator is enabled to run several machines at one time.

Owing to the simple operation, the cost of dyeing is low,

There is one more feature we wish to mention, and that is when new chemicals are added to the vat: in this machine there is no stacking necessary, for as the yarn is on a frame and the frame is lifted by a hydraulic lift, clear out of the liquor, the new drugs may be added with great ease. For further information, address, The Dill Spool Support Co., N. E. cor. Lehigh Ave. and Hancock Street, Philadelphia, Pa., where the machine can be seen in operation,

—E. B. Bogardus, at the Philadelphia office of Buckingham & Paulson, takes a hopeful view of business and thinks the dawn of a new era is coming.

The "18-90-4" Foster Cone Winder.

The illustration on page 32 shows the "18-90-4" model of cone winder, built by the Foster Machine Co., of Westfield, Mass. Making a specialty of winding, doubling and twisting machinery, it is but natural that with the progressive spirit this company has always shown, together with the mechanical ability and inventive genius of the practical men connected with it, they should have made advance over the first type of machine which they put on the market several years ago, and which at that time marked a radical improvement in this line of machinery.

The "18-90-4" machine goes a step further in the lines which have made the Foster cone winders so popular. Each drum is independent, and there is even tension and speed, and everything is so adjusted as to insure very high speed, with consequent great production but at a minimum expense of power, nor is quality sacrificed to production. We do not believe there are better cones made than those on the Foster machine. The double stop motion acts whenever a thread breaks or runs out, and also when the cone has reached the required size. Knit goods manufacturers know that there is no necessity of rewinding cones wound on the Foster machines on to wooden spools for knitting.

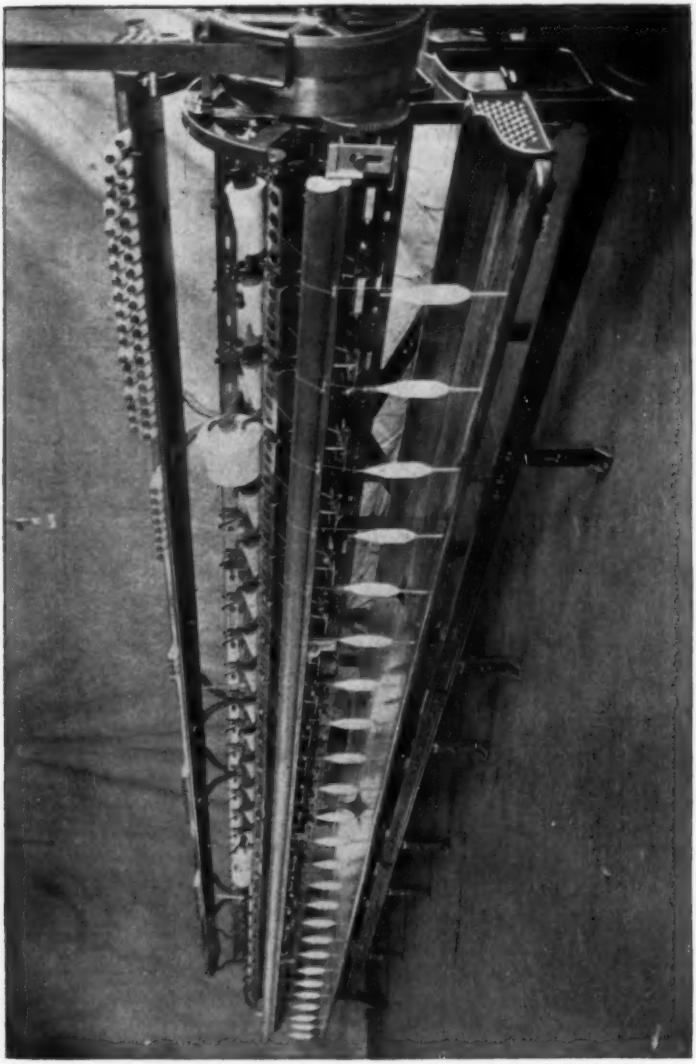
The company was awarded the highest and only medals and diplomas at the World's Columbian Exposition for this class of machinery.

New models of the Foster doubling cone winder and skein winder are being brought out. This doubling tube winder is a very economical machine. It doubles the yarn on to paper tubes, so that it can be put on the twist rack; makes a better twist, because it has an even pull all the time, and there is no chance to run in single and make waste, on account of the quick traverse. Spools can be done away with. These machines can be arranged for doubling any number of threads up to six ply.

The quick traverse prevents all squid ends. There is no running over or getting too full, or drawing in at the side. It will run longer in the twister, and give better results every way.

The "18-90-4" skein winder winds direct from the skein on to paper tubes or cones. It is equipped with double automatic stop motion and slack thread controller. The yarn does not break when snarled, thus avoiding knots, and will stop when the end runs out. A combined yarn guide and weighted carrier mounted on an upright spindle hangs on the yarn, always keeping it taut, and is a very clever device. When the skein is snarled, the carrier rises above its normal position on the spindle, turns around in a pocket, releasing the yarn and stopping the drum.

The Foster Machine Co. have recently issued their descriptive catalogue B, which they invite those interested to send for.



THE "18-90-4" FOSTER CONE WINDER.

COTTON DEPARTMENT.

Fancy Weaves for White Cotton Goods. Honey Comb Weaves.

For the Textile World.

There is probably no class of weaves which produces more novel effects, than the honey comb weaves, and in white

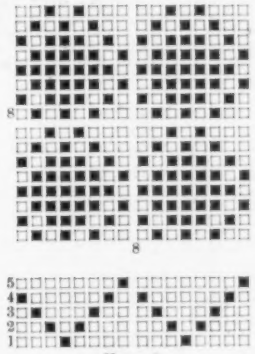


FIG. 1

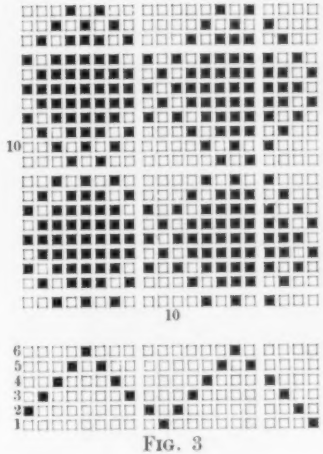


FIG. 3

cotton goods, where the weave forms the entire design, they are of particular value. Forming squares which show up on the face of the fabric, producing an effect like the honey comb, from which effect the weaves derive their name.

Fig. 1 is the simplest kind of a honey comb in general use, it repeats on 8 ends and 8 picks, but can be woven on five harness by using the point drawn as shown below the weave.

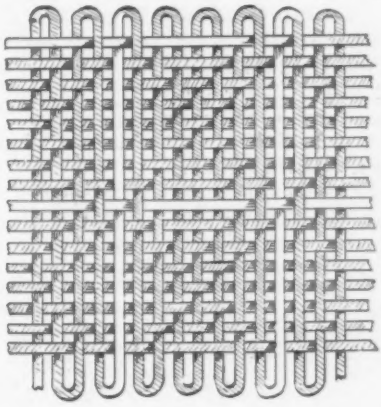


FIG. 2

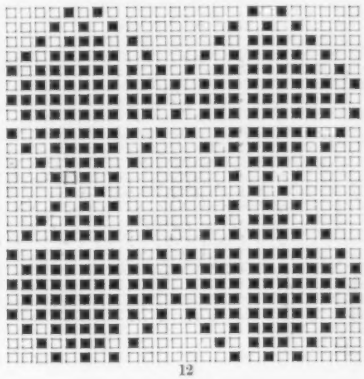


FIG. 4

The effect produced by this weave will readily be seen by an examination of Fig. 2, which is an enlarged section

of a fabric woven on it. The threads which are the boundaries of the honey comb squares are shown in plain white; and it will be observed how each thread after those, or coming next, bind tighter, gradually increasing the intersections down to the centre of the square. This binding tighter not only serves to make the weave, but throws the boundaries of the honey comb

SQUARE INTO HIGH RELIEF,

and the more picks that are put into the fabric, the more prominent the square will be.

Fig. 3, is a larger honey comb weave, which repeats on ten ends and ten picks, but by use of a point draw, can be woven on six harness.

Fig. 4 is a larger size of honey comb, and repeats on twelve ends and twelve picks and can be woven, by using a point draw, on seven harness.

All honey comb weaves can be reduced down, to be woven on less harness than the repeat of the weave, and in most instances, where they can be put on a point draw, the number of harness used is always one more than half the number of ends in a repeat.

Fig. 5, also repeats on twelve ends and twelve picks, but is a weave which binds tighter than Fig. 4, the warp float being reduced while the filling floats remains the same.

Fig. 6 is a large sized weave and is

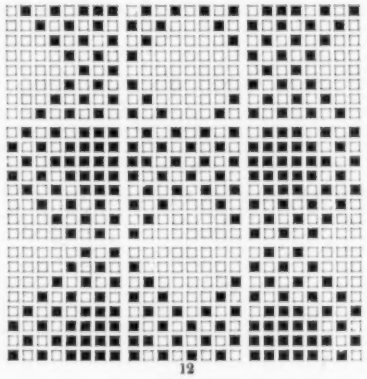


FIG. 5

used where large effects are desired. It repeats on sixteen ends and sixteen picks, but can be woven on nine harness by using a point draw.

Fig. 7, is a weave which produces a very peculiar effect and cannot truly be

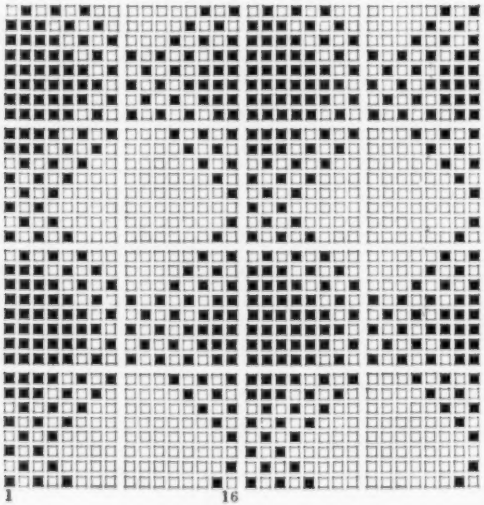
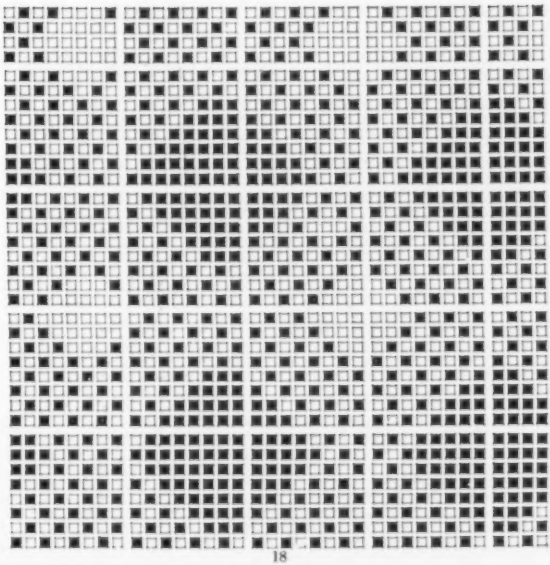


FIG. 6

called a honey comb; it repeats on twenty ends and twenty picks, but

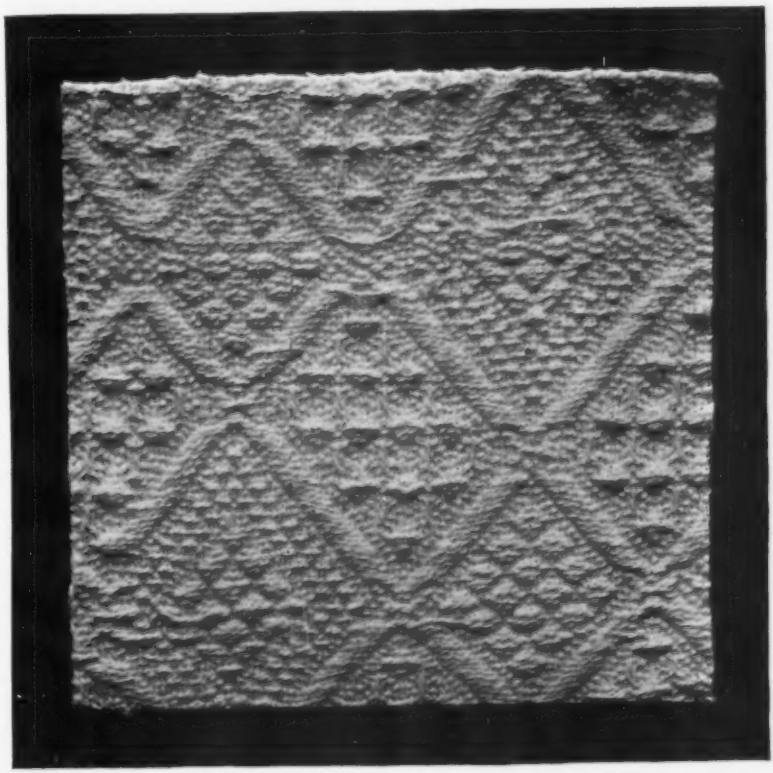
BY A POINT DRAW

can be woven on eleven harness. These weaves are very rarely used to produce



18

FIG. 7.



HONEY COMB WEAVES. FIG. 13.

the entire fabric, but are usually combined with heavy twills, and with point twill weaves such as Fig. 9 and 10. By the combination of heavy warp or filling faced twills with them, very striking effects can be produced.

These effects have been mainly produced in the weaving of bed spreads, such as Fig. 13 is a small section of, but they can be and are used in fine counts of cotton yarn to produce white goods, and some new and novel effects can be obtained, which are what is desired.

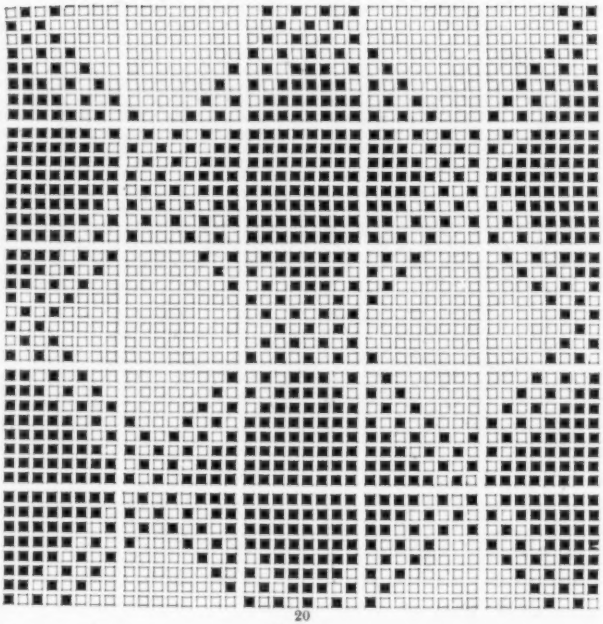


FIG. 8.

An entirely different style of honey comb is shown in Fig 11; this weave repeats on sixteen ends and sixteen picks, and can be woven on fourteen harness by using a cross draw, as the weave will not admit of a point draw.

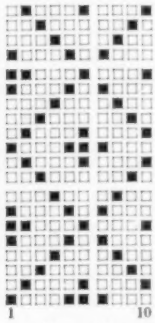


FIG. 10

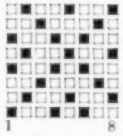


FIG. 9

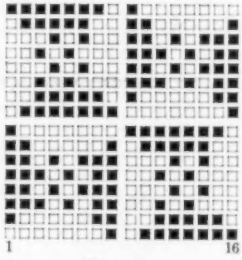


FIG. 11

Fig 12 is also a weave of the latter class and repeats on twenty ends and twenty picks, and requires eighteen harness.

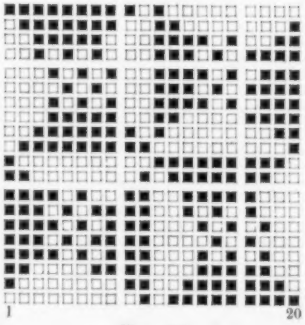


FIG. 12

How Yarn is Numbered.

For the Textile World.

The system of numbering yarn is very simple, when it is understood, but the great trouble is that most people do not understand how it is numbered and what is the difference between those numbers. The numbering of cotton yarn is based on the number of hanks in a pound, each hank contains 840 yds., and the number of these in a pound is the count of the yarn. Thus 20 yarn consists of 20 hanks of 840 yds. each in a pound, which equals 16,800 yds. To find the number of yards of any count, multiply the 840 yds. in each hank by the count of the yarn, and the result is the number of yards in a pound. If the number of yards in a pound is given, and it is desired to know the count, the number of yards should be divided by 840, which equals the count.

Thus, if the yarn contains 33,700 yards to a pound, this divided by 840 gives 40, or the count of the yarn.

This method of counting is used in the United States and England, but in France the hank contains 1094 yards, and number 20 yarn, according to the

FRENCH METHOD,

is equal to about number 26. If it is desired to change yarn from the French method of counting to the English method, the number of yards in a hank (1094) should be multiplied by the count and this result divided by 840, the number of yards in an English hank, will give the counts.

The counts of worsted yarns are based on the number of hanks in one pound, each hank containing 560 yards. Thus number 30 worsted yarn consists of 30 hanks of 560 yards each, or 16,800 yards in one pound. The German method of numbering worsted yarn is in hanks of 840 yards, and consequently their corresponding numbers are much finer than ours: thus number 20, German count, equals 16,800 yards, which divided by 560 English hank, equals number 30.

The French method, for worsted yarn, is the number of hanks containing 787 yards in one pound. And consequently their corresponding number, while not as fine the German, is still a great deal finer than the same number in our count. Number 20, French count, equals 15,740 yards, which is equal to about number 28 in our count

LINEN YARNS

are based on the hank, or lea, of 300 yards, and the number of these in one pound is the count of the yarn. Thus number 30, linen yarn, consists of 30 hanks, or leas, of 300 yards each, or 9000 yards to the pound. This, strange to say, is the only yarn where a really universal method of numbering is employed, the French and German hanks each containing 300 yards.

The method of numbering woolen yarn, is entirely different in almost every country, and in the United States there are two methods in use, but the general system is one where the hank is based on 1600 yards; which is called a "run." Thus a yarn containing 8000 yards to the pound, is called a "five run" yarn; and in this method of counting, the fractional parts of a "run," down to one quarter, are used; thus a yarn with 5200 yards to the pound is equal to 3 1-4 run. In the vicinity of Philadelphia, the woolen yarn is based on the "cut," each "cut" consisting of 300 yards, and the count is the number of cuts in one pound. 30 "cut" yarn contains 9000 yards to the pound, and is equal to about 5 1 2 "run."

TO REDUCE YARN

numbered in "cuts" to "runs," multiply the yards in a "cut" by the number of the "cut," and divide the result by 1600 which gives the number of "run."

To reduce "runs" to "cuts", multiply the number of yards in a "run" (1600) by the number "run" the yarn is, and divide by 300, and the result will be the number of "cut".

In England, woolen yarn is numbered the same as worsted, 560 yards in a hank.

The Prussian system has 1604 yards in a hank, and is very close to that used in

the United States. The Saxon has 495 yards, the Austrian 1500 yards, the Elbuef 3938 yards, and the Sedan 1633 yards.

The method of reducing to runs or cuts, yarn numbered according to any of these various systems, is to multiply the number of yards in a hank by the count of the yarn, and divide by 1600 if it is desired to reduce it to "runs," and by 300 if to "cuts".

Spun silk is numbered on the same system as cotton, that is 840 yards in a hank, and the number of hanks in a pound is the count of the silk.

The

SWISS METHOD

is an exception to this, their hank consisting of 547 yards, and the number of these in one pound is the count of the yarn.

Thrown or net silks are numbered on an entirely different principle. The hank, or "skein," as it is called in this kind of fibre, contains 520 yards, and instead of reckoning the size by the number of hanks in a pound, it is found by weighing a skein, and the number of deniers that the skein weighs (reckoning 533 1-3 deniers to the ounce) is the size of the yarn. If a skein weighs 30 deniers, that is the size, and, to find the number of yards in an ounce, multiply the number of deniers in an ounce (533 1-3 by the number of yards in a skein (520), and divide by the number of deniers the skein weighs: 533 1-3×520=277,333÷30=9244, yards in one ounce.

Another system is used in Manchester, where the yarn is based on a scale of 1000 yards to the hank or "skein," and the number of drams which one hank weighs is the size or number of the yarn. When using the Manchester method, the number of yards in one ounce, of a

2-DRAM SILK

can be found by multiplying 1000 yards, the number in a hank, or "skein," by 16, the drams in an ounce, and dividing by the number of drams which a hank or "skein," weighs: 1000×16=16,000÷2=8000 yards in one ounce.

Sewing silk is graded entirely different from anything as yet, and the following table will show the numbers and corresponding yards.

	yds. per oz.
000=32,000 yds per lb.	or 2000
00=25,600 " " "	" 1600
0=20,800 " " "	" 1300
A=16,000 " " "	" 1000
B=13,600 " " "	" 850
C=10,400 " " "	" 650
D= 8,800 " " "	" 550
E= 6,400 " " "	" 400
EE= 5,280 " " "	" 330
F= 4,192 " " "	" 262
FF= 3 392 " " "	" 212
G= 2,000 " " "	" 125

Mohair and Alapaca yarn are numbered alike, the hank containing 560 yards, and the number of these in a pound being the size of the yarn.

Two ply yarn in cotton, worsted etc., is numbered according to the size of the single yarn with the number of the ply before it. If two threads of 20's are twisted together, the yarn is called 2-20s, and means that it is composed of two ends, and will weigh 10 hanks to the pound.

Some times in

FANCY YARNS

threads of unequal thickness are twisted together; thus a 70 and a 30 are twisted, and the count of this yarn would be 1-70th and 1-30th of a pound added together.

$$\frac{1}{70}+\frac{1}{30}=\frac{3+7}{210}=\frac{10}{210}=21$$

the count of the yarn.

If three, four or more, ends of unequal count are twisted together, the count of the yarn may be found by pursuing the same method employed in the two ply yarn. If a thread each of 10's, 40's, and 80's are twisted together, the size of the resulting yarn will be 7 3-11:

$$\frac{1}{10}+\frac{1}{40}+\frac{1}{80}=\frac{8+2+1}{80}=\frac{11}{80}=7\ 3\text{-}11\text{ths.}$$

In all ply yarn some allowance must be made for the twisting, but as this varies according to the number of turns per inch, it can only be taken into account when the number of turns is known.

In spun silk the yarn is nearly always two or three ply, and the number of the yarn always indicates the number of hanks in one pound. The number of ply is usually written after number of hanks in one pound. A yarn which is size 50's-2 has 50 hanks to the pound and is made up of two threads of 100's single.

Chats on Cotton Combers.

VII.

For the Textile World.

"Now, George, we are all through setting the comber; we will proceed with the mathematical part of the changing," said the overseer. "We have a lap weighing 200 grains per yard and want to take out 20 per cent. of waste, and have the sliver weigh 36 grains per yard, at the coiler.

"I also want to put a 15 feed gear on, which is the smallest we have. The smaller the feed gear is, the slower the feed roller will turn, and the slower the feed roller turns, the more the stock will be combed; for example: If the cylinder turns 80 revolutions per minute the cylinder will turn 10 turns to one of the feed roller, with 19 feed gear on; thus, 80 turns of cylinder, $\times 5$, teeth in star wheel, $\div 19$, feed gear, $\times 38$, gear on feed roller, $= 800 \div 80$, turns of cylinder, $=10$, turns of cylinder to one of feed roll with 19 gear. With 15 feed gear the needles pass through the cotton 12.66 times to one turn of feed roller, thus: $80 \times 5 \div 15 \times 38 = 12.66$, and it is at once obvious that

THE SMALLER THE FEED GEAR

the cleaner the sliver will be.

"We will now get the gears and take the draught:

$\frac{3}{4}$ of an inch, diameter of feed roll.
38 gear on feed roll.
15 feed gear.
5 star wheel.
1 pin.
57 gear on cylinder shaft.
70 gear on coiler.
17 gear on stud with 70.
23 gear on upright shaft.
26 gear top of upright shaft.
20 gear on calendar roller.
2 inches diameter of calendar roller.

"Multiply the drivers together, leaving out the feed gear; then multiply the drivens together; then divide the drivers into the drivens. Thus:

$$\frac{38 \times 5 \times 57 \times 17 \times 26 \times 8}{3 \times 1 \times 70 \times 23 \times 20} = 396.42$$

$396.42 \div 15$, feed gear, $= 26.42$, draught.

"Now take the weight of the lap per yard (200 grains), and multiply by the number of laps (6), then divide by the draught (26.42), take away 20 per cent. for waste, and the remainder will be the weight per yard at the coiler; thus: $200 \times 6 = 1200 \div 26.42 = 45, -20$ per cent. $=36$ grains per yard at coiler.

"Now put the laps in and run the comber half an hour or so, then I will come back and take the percentage."

When the overseer returned he weighed one yard and found it light; turning to George, he said, "Make it

FEED TWO TEETH SOONER."

George did so; then the overseer weighed another yard and finding it all right said, "We will take the percentage. Stop the comber and break the waste off at the doffer, close to the comb; then break the sliver off close to the calendar roller. Start the comber up and run it about 30 or 35 nips. Now stop it and break the waste off, close to the comb, as before; then break the sliver off close to the calendar roller. Now weigh the sliver and waste separately."

George does so, and returns and says, "The sliver weighs 288 grains, and the waste weighs 72 grains."

"Add the two together," said the overseer, "$288 + 72 = 360$, and divide the total into the weight of the waste (72), with two ciphers annexed, and that will be the percentage; thus: $288 + 72 = 360$. $7200 \div 360 = 20$ per cent waste.

"Now a word or two in regard to running this stock through the combers. This Sea Island is going to be made into 130s and 150s yarn, therefore it requires very careful handling in each process. One thing to be guarded against is slugs, and bunches more especially, while it is being run on, and after it leaves the combers; as anything that is in,

WHEN IT LEAVES THE COMBERS,

will be in when it is being spun, and every little nep shows in the yarn, it being so fine, beside causing no end of trouble to the weaver, by the warp breaking. Therefore I want you to keep the comber tender cleaning continually, especially with the finger brush at the ends of the leather detach-

ing rollers, also to keep all clearers clean, and to see that the top combs are not allowed to fill up, but have them kept clear of all waste; also to have the leather detaching rollers kept well oiled and varnished, and change them as often as it is necessary; have the brushes cleaned out twice a week, and keep a sharp look-out for bunches on the cylinder; if any are found take cylinder out and put a new one in, and keep a general watch that the work is first-class in every way.

"We will now prepare the drawing frames to run this Sea Island cotton. First spread the rollers. Put the second roller 1 3-16 inches from the front roller. The third roller the same distance from the second, and the back roller 1 7-8 inches from the third roller on

EACH DRAWING FRAME.

Now put 8 ends in at the back. Next we will take the dividend and draught. The following are the gears:

1⅛ in., diameter of back roller.
62 gear on back roller.
40 to 60 change pinion.
100 crown gear.
20 gear on front roller.
16 gear on front roller.
34 gear on calendar roller.
3 in., diameter of calendar roller.

Leave out change pinion and get the dividend:

$$\frac{62\times100\times16\times24}{9\times20\times34} = 389.02 \text{ dividend.}$$

"I want this drawing to weigh 41 grains at the front, so we will have to find what draught will give that weight. 36 weight per yard at the back of drawing, ×8 ends=288÷41, grains required, =7.02, draught required. 389.02÷7.02 =54, gear required.

"We will now take the second drawing: want this to weigh 40 grains per yard at the front. 41×8=328÷40=8.10, draught. Take the dividend, which is 389.02÷8.10, draught,=48, gear required.

"We will now take the third drawing frame: I want this to weigh 40 grains per yard, at the front, thus 40×8=320÷40=8.00, draught required. Now we can not get 8.00 draught with the gears we have on, so we will put on 48 pinion gear, which will give us a 8.10 draught; then we will change our back roller gear, which is a 62 gear; thus if 62 gives 8.10 draught, what will give 8.00? 72×8.00÷8.10=61 back roller gear required; thus 40, weight per yard at back, ×8, ends at back,÷800, draught,=40 grains per yard at the front".

(To be continued)

Memphis Cotton Exchange Bagging Rule.

The following new rule in reference to bagging has been passed by the Memphis Cotton Exchange: "All bagging not absolutely essential to cover and protect the contents of the bales in a proper manner shall be deemed unnecessary, and shall be removed from the bales before they are weighed, or a fair and equitable deduction shall be made for the weight of such bagging. All such unnecessary bagging when removed shall be the property of the seller. The usual side pieces, which should consist of no more than a single half width of bagging running the length of the bale, will not be considered unnecessary bagging, and shall not be removed without the authority of the parties in interest."

Dyers and Finishers for Three Generations.

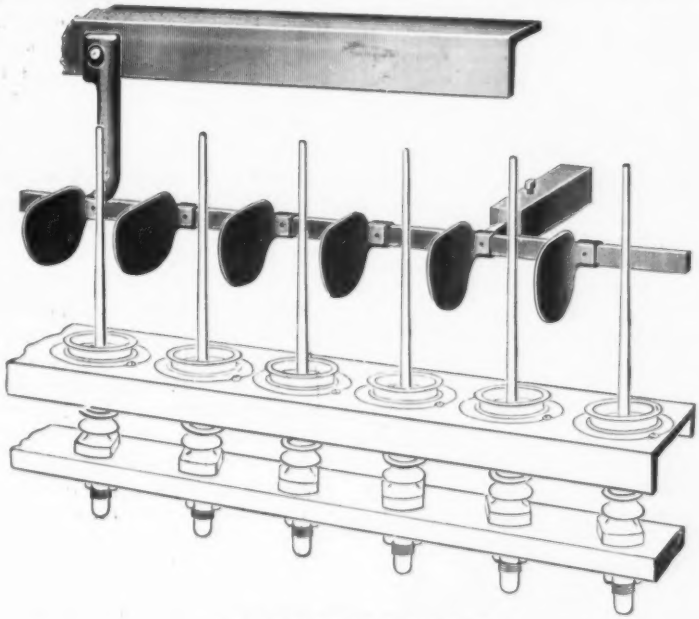
The Heap family have been engaged in the business of dyeing and finishing cotton goods, counting their experience in England and at the Boston Finishing Works, at Williamstown, Mass., for three generations. In the Williamstown works every effort has been made to avail to the fullest extent of their long experience and of the best and latest machinery and methods on the market, as well as improvements of their own developement.

In going through their works we were especially impressed with some wool finished cotton goods, which a casual observer would, unless looking closely, call plain woolen dress goods. This finish was in various shades and colors. In the bleach we saw them pro-

ducing as perfect a white as has ever come under our notice, and in nap finished goods this establishment is producing especially pleasing effects. The works are now finishing one million yards of goods per month, and adding to their dyeing and bleaching capacity.

The New Doyle Separator.

As the Doyle separator patent is near its legal limit, there will soon appear numerous cheap structures classed as separators, some of which are even now giving slight preliminary token of existence.



THE NEW DOYLE SEPARATOR.

In order to anticipate such apparatus Messrs. Geo. Draper & Sons, of Hopedale, Mass., who control the Doyle patents, have brought out a new type of Doyle which they offer as the best cheap separator they can devise. They do not claim it is the best separator, as certain important improvements in this field have lately been introduced (the Rhoades Chandler, also controlled by Geo. Draper & Sons), which they recommend in preference. In certain instances, however, the price is bound to govern the trade, and they have determined to control the field on cheap separators as well as on the more expensive and better varieties.

While this separator is sold at a low price, it is by no means inefficient. They have taken the regular Doyle pattern and simply changed it by using sheet metal blades and a flat rod on which to string the blades. They have a new method of fastening the blades to the rod, which has manifest advantages, inasmuch as the blade once set, can not get out of place. Sheet steel makes a much better blade than cast iron, and the flat rod and method of attaching blades, present fewer chances for collecting lint and dirt, than the old style double rod Doyle. The blades are also lighter, giving the ring rail less weight to move.

—The firm of E. Schulz & Grossman, proprietors of the Fairhill dye works, Philadelphia has been dissolved.

WOOLEN DEPARTMENT.

Pattern Warps.

For the Textile World.

No department of a mill is more generally slighted than the pattern or designing department. Most manufacturers look upon the outlay in this branch as so much wasted money. In doing so, they are only fooling themselves, for it is really the most important; because the fabric could be the finest made for the money, but if the styles were not right, it would not sell; style is everything.

In the making of pattern warps, the principal part of the work is, first to get good ideas to work from. And a visit to the New York market is one of the best ways, and it will pay a mill to send their designer.

If the class of goods to be manufactured is high priced, the best way to secure good ideas, is to go through the jobbing house lines, and get samples of the best sellers in foreign makes of high priced goods. Almost every commission house in New York has means of getting these jobber's samples.

Whatever sells well in Paris and London will also go here, for those two places set the fashion.

If it is desired to make a

CHEAPER CLASS OF GOODS

the best way, is to copy the sellers of high priced domestic goods, in the cheaper fabric. If a man sees a suit on another man and he likes it, of course he wants a suit like it, but he may not be able to pay as much as the first man did, so he buys the same style in a cheaper fabric.

If a cheaper grade still is to be made, it is best to copy the medium priced goods which have been sellers.

Before starting to make any pattern warps, it is best to select the colors which it is desired to use, because if the right colors are not used, the warps are useless. So many manufacturers are in a hurry to make warps, thinking that the most important part, but if the colors are not right the warps are no good.

When the right line of colors has been obtained, and a certain style is to be made, it should be numbered and put in a book with full particulars. Then lay out the warp, using every color in the line; if the style is a plain suiting, use all the colors, dressing each one about two and one half inches in width, and then the dressing of

EACH SECTION

should be put in the book and numbered, commencing at the left hand side, 1, 2, 3, 4, 5, etc. Then in weaving, the fillings should be put in, in the same order as the warps, thus filling No. 1 should be the same as warp No. 1, and filling No. 2 same as warp No. 2, and filling No. 3 same as warp No. 3, etc. Dressing and weaving this way, will bring the right or true patterns of the style in a diagonal line across the warp beginning at the left hand side.

When finished, the number of sample the warp is made from, should be sewed on the end of the warp, and this number should be preserved to distinguish that style all through the mill. Thus, if the warp is numbered 47, and several samples are selected from it, to be made into selling ends, they should be styled 47-1, 47 2, 47-3 etc., because, if numbered, each pattern only having a different number, it is easier to remember and thus is better than styling consecutively. The principal thing to be remembered in making pattern warps, is, first to get the colors right, and second, to get every color into every warp made.

Worsted Spinning.

For the Textile World.

Continued from June.

In judging how much draft stock will safely stand, there are a number of points to be taken into consideration; the average length of the fibre is a very important one, and the grade or thickness of it is another; also the condition of it must not be overlooked, as it may be all right for length and grade, but might have had the life taken out of it in the scouring. When this is the case the roving will be full of thick places, or slubby all through, caused by the wool slipping during the drawing operation.

Another thing to be considered and which frequently causes bad work is the condition of the rolls on the different machines. These rolls are made on an iron frame covered with wood which is also covered with leather, stretched tight and glued on, making a hard smooth surface. When the rolls are carelessly covered, or good cement is not used, the leather will work loose in places, and if this is not detected at once, the roving which passes under a roll with these places will be very uneven.

The process of spinning the roving into fine thread, so it will reel off the exact number of yards to the pound wanted, is a very interesting one. In setting the frame to spin the thread the spinner must first know the length of his roving, then he places the necessary wheels on the frame to draw the thread out to the length wanted. The rovings,

OR SPOOLS WITH THE ROVING ON,

are placed at the top of the frame and the spinner takes the end, places it between the rolls and guide, and around the bobbins on the spindle; the thread is then drawn out very much the same way as it is in the drawing room machinery, only the spinning frame runs at a much higher speed.

The help in the spinning room is composed principally of small girls, between 12 and 17 years of age. The youngest are doffers, who take the bobbins off the spindles when they are full of yarn, and replace them with empty bobbins. Then come the waste girls, and sweepers who collect the waste, and the spinners who attend to the spinning frames. Their work is to watch the ends—as soon as one breaks, they piece it up or join them together; a good spinner can do this so it will be almost impossible to discover where the piecing was done. Next to the spinners come the roving girls, whose work is to place the rovings (when they are brought from the drawing room) on the spinning frame. Each room has a man, the boss spinner, to look after it; he generally has a boy to assist him; their duties are to change the frames when a change is to be made in the size of the yarn to be spun, to keep the frames in good order, and to keep the help at their work. The latter takes the greater part of their time in most mills, as small help

REQUIRE CONSTANT ATTENTION.

There are a great many details to be looked after in the spinning room, which are often neglected on account of their smallness, and they cause a large amount of trouble at times.

The spinner should weigh the length of the roving when it is received from the drawing room; by doing this he will save work and trouble. The yarn from every frame should be tested for size twice a day, the rolls should be closely examined, and kept in good order, and when the old style cotton band is used for driving the spindle, they should be looked after closely, for when they commence to wear out the cotton will fly off and often twist into the worsted and cause trouble in the goods. If the band is allowed to become slack, the thread spun by the spindle it drives will have very little twist in, and will have to be cut off and thrown into the waste. The tapes used in a number of mills in place of the old style bands, are a great improvement as they are so regulated that they are kept at the same tension continually, and consequently the

SPEED OF THE SPINDLE

is the same at all times and the twist in

the yarn is more regular, and it does not require so much power to drive them.

A number of manufacturers in their anxiety to have a large quantity of work turned off, have their frames run too fast. At times they are successful, as far as production is concerned, but the quality of the work is often very inferior. It is false economy to turn off inferior yarn. It is a good plan to know exactly how much each frame will turn off of every kind of yarn they make; this can be done by counting the revolutions of the front roller per minute and multiplying by the circumference. (These are the last rolls, the roving goes through before it is wound on the bobbin.) This will give the length of the thread turned off per minute, and the amount per hour and day can be easily determined from that, and after deducting for the stoppages, from doffing, etc., the

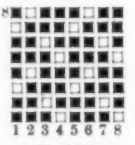
NET PRODUCTION IS EASILY FOUND.

The actual amount turned off should be compared with the calculated amount, and if it does not compare favorably with it, the boss spinner should be able to tell why.

The yarn is always spun single, and as the greater part of it is used double or two ply, it must be taken to the twisting room. Here the bobbins are placed on the twisting machine, and if two ply is wanted, two ends are run through a guide and around a leather covered cap, and drawn under a trap or stop motion, which causes both ends to stop when one breaks, and then on the bobbin which is turned by the spindle, driven by the bands or tapes the same as the spinning frame is. The twisting can be regulated by changing the wheels, so that the number of twists or turns to the inch can be made as wanted. The less twist put in, the greater will be the quantity of yarn turned off. After the yarn is twisted, it is carried to the spooling frames, and spooled from the bobbins on the six inch spools, or, if it is wanted in the skein, it is reeled off the twisting bobbins, and made into skeins of any length required. After being closely examined it is bundled up ready or shipment.

Correspondents Answered.

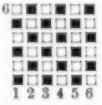
Correspondent asks for construction of broad cloth:



WEAVE.

3050 ends, 4 run warp,
10 reed, 4 ends in a dent,
76 inches wide in loom,
48 picks, filling 4 run.
Finished 54 inches wide. Weight 15 1-2 oz. per yard. Regular Kersey steam finish.

Correspondent asks for construction of Melton:



3050 ends, 4 run warp,
10 reed, 4 ends in a dent,
76 inches wide in loom,
Filling 48 picks, 4 run.
Finished 54 inches wide. Weight 15 1-2 oz. per yard.—[Ed.

Fulling Mill and Cloth Washers.

We are happy to find that business with A. Hopkins & Co., 75 Westminster St., Providence, R. I., is very good, and they are now ordered considerably ahead with their improved machines. We have previously mentioned both of these machines in our new machinery columns, and in addition to the advantages there stated, one feature which is very popular with these machines is that the parts are interchangeable, so that whenever repairs are required, it is only necessary to designate the part wanted, the same as in ordering repairs for watches or sewing machines.

In several instances we are informed that where difficulties have been experienced in securing a desired finish with older styles of mills, these new Hopkins' mills have been introduced with radical success.

Wool in the United States.

HOW IT IS DISTRIBUTED AND WHAT IT AMOUNTS TO IN THE WORLD'S SUPPLY.

Compiled from Goverment Reports for the Textile World.

The tariff controversy on the woolen schedule has revealed the fact that the United States stands high on the list of wool producing countries, but it has failed to disclose how near the top it actually does come. It is third on the list, Australia coming first with an annual yield of 550,000,000 lbs, the Argentine Republic second with 400,000,000 lbs., and the United States third with 300,000,000 lbs. Then follow in order Russia, Great Britain, France and Spain.

Although the Argentine Republic produces more dirty wool, the actual clean wool yield of the United States is more than that of that Republic because their wool shrinks at least 65 per cent.

There are 45,050,000 sheep in the United States according to the latest official report of 1894, a decrease of over two million since 1893.

California stands at the head with 3,900,000. Then comes Texas very little behind with 3,800,000, and Ohio follows with only 100,000 less.

New Mexico, Montana, Oregon, Michigan, with from 2,300,000 to 2,900,000 follow, and then Utah, Pennsylvania, New York, Colorado, Wyoming, Kentucky, Illinois, in the order named.

The growth of sheep interests in the Western States has been much more rapid during the past year, than in other parts of the country, and if continued at the present ratio will leave the sheep-producing States of the

OHIO VALLEY FAR BEHIND.

During the past year there has been a great decrease in nearly all of the States.

The following lists gives the difference between the number of sheep in the different States in 1893 and 1894.

DECREASE.

Ohio	613,000
Texas	520,413
Michigan	225,927
Utah	211,758
California	206,219
Pennsylvania	163,722
Illinois	154,353
Wisconsin	131,799
Indiana	108,038
New York	104,207
Missouri	98,995
West Virginia	75,729
Kentucky	74,240
Maine	71,767
Kansas	66,237
Vermont	49,442
Mississippi	31,301
Tennessee	21,657
Georgia	21 640
New Hampshire	20,377
North Carolina	19,806
Iowa	15,821
Alabama	14,326
Arkansas	11,926
Nevada	11,104
Virginia	9,968
Louisiana	7,678
Dakota	6,560
Maryland	6,060
New Jersey	3,675
Connecticut	2,549
Massachusetts	1,591
Rhode Island	981
Delaware	678

INCREASE.

Montana	252,810
New Mexico	191,106
Arizona	110.367
Oregon	73,682
Colorado	61,574
Idaho	15,385
Minnesota	15,098
Washington	8,138
Florida	6,390
Nebraska	5,450

At present the Southern New England States are the ones which have the smallest number of sheep; Massachusetts 51,000; Connecticut 39,000; Rhode Island 11,200.

The importation of wool into the United States in 1893 amounted to about 175,000,000 pounds. The exports to about 91,000. Since 1870 the proportion of wool for domestic uses imported into the United States has risen from 23 to 33 per cent.

Construction of Double Cloth Weaves.

For the Textile World.

Probably no class of weaves give the majority of mill men as much trouble in constructing them as do those for double cloth fabrics, and in most cases the reason for this is that they do not exactly understand the principle of constructing them, and do not know the simplest methods.

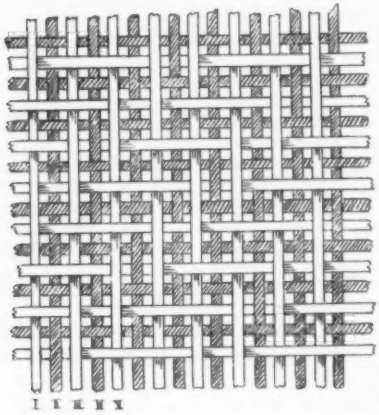


Fig. 1

In designing this class of weaves it must always be remembered that there are two systems of warps, and two systems of filling. One system of warps and filling being for the face fabric, and the other system for the back cloth.

Figure 1 is an enlarged portion of a double cloth fabric, the warp being dressed one end face, one end back, the filling the same. The face is represented in the plain threads, and the back in the lined ones. The face of this fabric is woven on the regular four harness twill shown in Fig. 2. The back cloth is on the cotton weave, Fig. 3.

The weave for the entire fabric is Fig. 5. The two fabrics being joined together by the weave Fig. 4, which is shown in ✠ in Fig. 5. Fig. 6 is a section of the ends I, II, III, IV, V of Fig. 1, and it will be seen by examining this cut, that

THE BACK CLOTH

has nothing to do with the face cloth except where it is raised to join the two cloths together.

If it will be constantly borne in mind that the two fabrics are entirely separate in construction, except where they are

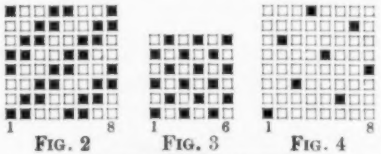


Fig. 2 Fig. 3 Fig. 4

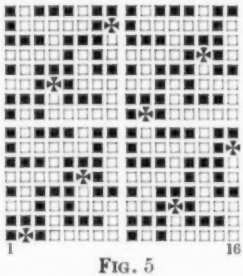


Fig. 5

joined, it will be very much easier to make a correct weave for double cloth.

The examples here shown are for fabrics where the face and back are dressed in the same proportion but the same rules will hold good where there are more face ends than back, if it is remembered that there are distinct cloths.

Usually the first stumbling block which comes in the way, is the mixing up of the face and back weaves on the

Fig. 6.

designing paper. The way to overcome this is exceedingly simple; first mark off on the design paper, the ends and picks which are to be on back cloth. Then on the face ends set off the face weave (Fig. 2). This will give Fig. 8.

After the face weave has been placed on the paper, indicate the back weave, Fig. 3, on those picks and ends which

are marked to receive it, which will give the result Fig. 9.

After the face and back weaves have been indicated on their respective systems of threads on the paper, raise all the face ends on

EVERY BACKING PICK,

and this being indicated will give the result Fig. 10, and all that remains to

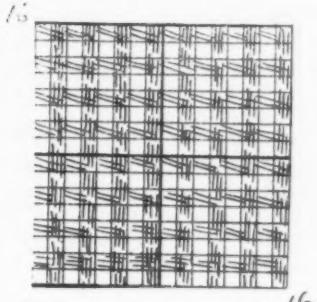


Fig. 7.

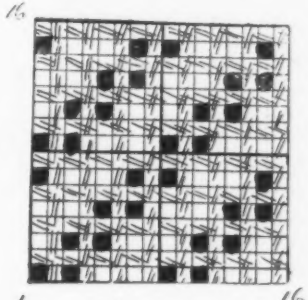


Fig. 8.

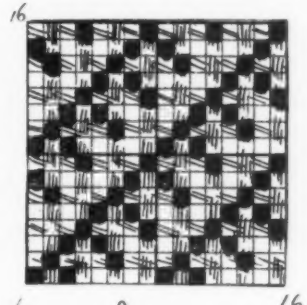


Fig. 9.

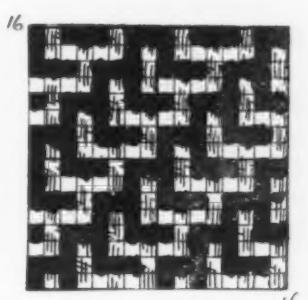


Fig. 10.

complete the weave, is to join the two cloths together with the weave Fig. 4, which gives the finished weave Fig. 5.

When the back is raised on the face pick, it should always have a face warp thread raised on the same pick on each side of it, because in doing so the face warp ends cover the stitching of the back cloth, and thus lessens the possibility of their showing on the face of the fabric.

The following summary gives exactly what needs to be done to construct a double cloth weave properly:

1st. Indicate each system of threads on the design paper.

2d. Indicate the face weave on its own system.

3d. Indicate the back weave on its own system.

4th. Raise all the face ends on every backing pick.

5th. Join the two cloths together by stitching, counting the weave off on the back ends, and have the back raisers come between two face raisers.

If care is taken to indicate the two systems of cloth before starting on the weave, no difficulty will be experienced.

Talks on Loom Fixing.

HIDDEN DEFECTS.

For the Textile World.

There are certain parts of the loom which the loom fixer cannot very well get at. When these parts are out of order it is difficult to fix them.

The writer was once engaged to take a job, loom fixing in a western mill. There was one loom in the mill which had been at a standstill for some months. It persisted in throwing out the shuttle. New pickers, sticks, shuttles, etc., had been used without number by the various men who had undertaken to fix the loom. A dozen weavers had quit with disgust after running the loom for a few days. It seems that the loom would take a notion once in a while and would run all right for a day or two. Then it would begin throwing out the shuttle, and those working in the vicinity were occasionally obliged to do considerable dodging. Finally a man came along, who, although he could not remedy the shuttle flying out, was able to keep the loom in running gear by the use of a sort of a net which he rigged up opposite the shuttle boxes. This was made of burlap and made quite a conspicuous object. Every time

THE SHUTTLE FLEW OUT,

into this net it would go, and no harm resulted. This strange bag or net was the first thing that attracted the writer's eye when he entered the weave room. The superintendent explained its use.

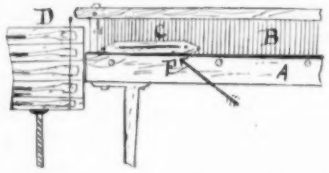
As all fixers like to show off and make a name for themselves when they take a new job, I thought that it would be a a very good thing for me to fix this loom so that the burlap bag might be taken down. I took my kit of tools to the loom, asked the weaver to stay out a half a day, and went at it. All the rules of scientific loom fixing which I had at command were adopted by me then. I began with the very foundation of the loom. I leveled it, set the picking motion so that both sides picked alike and with the cranks straight up, timed out the pickers so as to make them true, readjusted the sweep strips so as to get a full, even sweep, planed off the tops of the picker sticks so as to give a good, uniform push on the pickers, squared the reed with a level so that

PROJECTING BUMPS

might not throw the shuttle out of its travelling line. After all these things were done, and it took me nearly all day to do them, I put on the belt, started the loom and allowed it to run five minutes. The shuttle did not fly out and I was ready to crow over a victory.

Next day the weaver came in, started the loom and after it had run about ten minutes I was greatly disappointed to see the shuttle go flying out of it. This was repeated about as often as before I had fixed the loom, thus showing that the loom was still out of order.

My reputation was now at stake. I had intimated that I was able to fix the loom, and failure to do so now would be awkward. I determined upon a more thorough overhauling. The trouble must be a hidden one. I had the warp lifted out and began a systematic examination. With the try squares and other instruments I investigated the condition of the raceway, the reed adjustment and relating parts. All of these appeared to be in order. Finally I happed to stumble upon a dent in the raceway. Could this be the cause of the trouble? A cut is shown below in which the hidden defect in the raceway is indicated.



In this cut the letter *A* marks the beam of the lay, *B* is the reed, *C* is the shuttle and *D* are the boxes. The reed, the beam, the boxes and the shuttle were in good order. The raceway was not. Just at the point indicated by the arrow *F*, was a swelling in the metal

raceway caused undoubtedly by the springing of the lay, when a shuttle had been caught between it and the breast beam at some time.

This bump in the raceway was the cause of the shuttle being thrown out. Every time the shuttle would strike the bump in a certain way the forward end of the shuttle would be lifted up a little, catch a few threads of the shed, and up it would go into space and then onto the floor. Such causes do not occur often, and that is one reason why the fixer is slow in discovering them. Shuttles are usually thrown out by too much power on the picking motion, dents in the reed, boxes too high or too low, loom picking too soon, worn or

BADLY ADJUSTED PICKERS.

Let the shuttle be thrown out by these and the fixer detects the trouble in a moment and the loom is soon fixed; but it is these odd, unfrequent and hidden causes that trouble him. Hence the account of this affair is given as an illustration.

When raceways get out of true it is hard to fix them. Hammering will not do, as that simply causes the metal to rise in another place. The only way to do, is to take the entire raceway off the beam, take it into the machine shop and have the machinist true it. Perhaps the dented places will have to be heated before they will be soft enough to be pressed back into a common level. Anyway let the machinist have a chance at it. This is the way I fixed the above loom. I took off the raceway and had it trued. I put it on again, started up the loom and it ran from that time on without once throwing out the shuttle.

—Richardson & Pease, of Marlboro, N. H., have put in a Bramwell picker feed, built by Geo. S. Harwood & Son, Boston, Mass.

—The M. A. Furbush & Son Machine Company, of Philadelphia, have just completed the delivery of a very extensive order of woolen machinery for the Oakland Mfg. Co., Baltimore, Md.

Satinet Printing and Dyeing.

EDWARD TURNBULL.

VII.

WASHING.

For goods that have been printed they are then taken to

THE ROTARY FINISHING MACHINE,

although in a few instances, shearing has to be resorted to when found necessary.

In the case of goods that have been dyed, thorough washing is indispensable, and also the severest kind of washing, so that, after drying, this machine for softening that I have described is seldom resorted to in dyed goods. Good brushing and shearing is absolutely necessary, and correct judgment should be used at this operation, for it not only removes all broken cotton fibre and loose ends, causing specks, but it gives purity to the color of the goods, by cutting off the extreme end of the nap on the face of the goods, which, by friction in washing, has a punished and less intense appearance. Hence the absolute necessity of shearing, and a nice judgment in the amount of it.

THE ROTARY PRESS

in general use in most all woolen mills is used in this business, and needs no describing, but one of the most important factors in this, as in most all businesses, is the finish, for admitting perfection in every other part of the works, an error in finishing will offset the whole routine, for in these days of keen competition, buyers can afford to be exacting in their requirements, and a suitable appropriate finish for their different styles, not only of goods, but patterns printed on similar goods, so different from each other they would seem different fabrics altogether, each style serving its own purpose, and requiring its distinguishing finish.

Too much cannot be written on the importance of

THE PRESSING

or finishing of any kind of goods, and satinets form no exception to this rule; the finish must be suitable for each

M. A. FURBUSH & SON MACHINE CO.

PHILADELPHIA,

MANUFACTURERS OF

WOOLLEN MACHINERY

OF EVERY DESCRIPTION.

PREPARING, CARDING, SPINNING, WEAVING, AND FINISHING.

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characteristic style, as well as permanent. For this finished appearance of the goods should be retained when made into garments, and for a reasonable length of time after being worn.

I might mention here, that no kind of dressing is used to finish this kind of goods, except in a few instances of dyed goods, that are passed through a soap bath, a small quantity of fatty matter, from the decomposed soap is left in them; the goods have to depend on the heat and friction of the rotary press for their permanency. The goods are examined for imperfections, measured for length, each piece separated, rolled tightly, packed in their individual cases, and shipped to destination for converting into garments.

Steam Finishing Kerseys, Beavers and Face Goods.

For The Textile World.

The improvements made in the finishing of face goods, have made improvements in the machines necessary for this process of great importance, hence there are, at this time, various improved machines to do that, which in former times was accomplished by the boiling process. At any time, when high lustred goods have been in demand, it has been found that the old fashioned boiling process, although excellent in results, was far from giving satisfaction in point of quantity.

The upright steamer was then brought into use, and in its day was regarded as the acme of perfection; but soon something better was required for this process, time being considered as so much money.

Next came the steam gig, and this machine is even now regarded by many as the best machine for this purpose. The fact cannot be denied, that on account of the unfortunate condition of the tariff laws and the danger of a lively competition with highly finished foreign goods, it has led many manufacturers to put in steam finishing machinery, who have heretofore never felt the necessity of doing so. It is now not alone a question of

QUALITY OF FINISH,

for if that were all it is easily attainable with the means that were at hand, but it is decidedly a question of quantity and quality conbined. So far as quality is concerned, it is easy to satisfy all demands, so it is quantity which the builders of improved machinery for the steaming process are to supply.

There is but one machine which meets this requirement to the fullest degree, without in any manner sacrificing the other vital point, quality, and it is to the description of this machine as well as to the proper handling, not alone of this, but also of other steaming machines, that I shall give my attention in this article. The principle of the steaming process, aside from the boiling, has not altered since the first steaming machine was invented, and this principle is to-day, as it was then, simply the forcing of steam and water alternately through the cloth while tightly rolled up. On the old fashioned steamer this was done by rolling the goods on perforated metal rolls of about 2 or 2½ inches diameter, and, after securely fastening the covering, setting this roll in a frame especially made for this purpose, and locking it and then applying

STEAM AND WATER ALTERNATELY

through the metal roll with its perforations and thence through the goods.

On the steam gig the same principle remains, with this difference, that the rolls on which the goods are wound at top and bottom are perforated copper cylinders about 7 or 8 inches in diameter, steam and water were applied substantially in the same way as in the other process. The great feature of this machine over the upright steamer, was, that it saved the necessary handling of the goods back and forth from the roll-gig, unrolling, wet gigging, and rolling again. The steam gig saves all this labor, and, in consequence, saves time.

The latest improved steaming machine when closely examined, will be found to be only a steam gig laid flat on its back.

It consist of a perforated copper cylinder on each end, and a stiff brush in place of the gig cylinder in the centre. This, of course, is not all there is to these machines, but simply gives the salient features. They are generally well supplied with all the appliances necessary to give the desired tension, etc.

THE POSSIBILITIES OF A MACHINE

of this nature lie in the fact that there is more chance for an enlargement of the machine in this position, than if the position of the up and down, or steam gig, had been retained. It is possible to have the cylinders larger for one thing, and this is now the only direction in which an improvement is possible and at the same time retain the qualitative features of these machines.

The machine which is spoken of in this article is substantially as pictured, a steam gig laid flat, but its perforated cylinders are eighteen inches in diameter. Here is where capacity comes in; this is the very point, for it will be readily observed that six pieces tightly wound on on a cylinder of this size will present no greater distance for the steam to travel through, than on other machines in the case with two pieces. There is no reason why a machine of this kind should not come up to the claim of its makers, of being capable of doing sixty (60) pieces a day, if the machine is properly understood and handled. Many a machine is denounced as no good, when the fault is oftener to be found in the ignorance of the operator than in the machine itself.

(To be continued.)

New Finish for Textile Fabrics.

A new finish which can be applied to all tissues, pure or mixed, of silk, cotton, wool, linen, jute, ramie etc.; consists of 7 to 10 parts gun cotton, 7 to 10 parts castor oil, and 80 parts alcoholized ether, the proportion of the ingredients being slightly variable according to the tissues that have to be treated.

It is claimed that with this finish the tissue acquires more body and brilliancy and increased impermeability and non-combustibility.

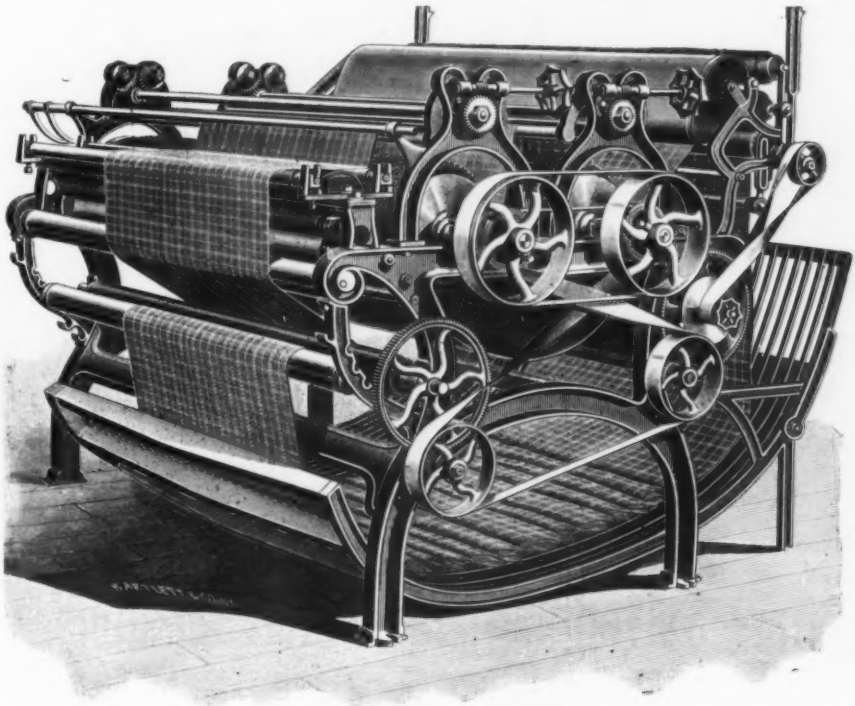
Steam Lustreing to Keep White Mixes From Turning Yellow.

When light mixes are steam lustered upon a roller, the colors become cloudy, dull, and lifeless. To remedy this the goods require the most attentive treatment throughout all the stages of fulling and finishing. Since soda invariably turns white wool a little yellow, the latter is only to be washed; fulling is excluded, and it is to be treated only with mixed and neutral soap. The wool lubricant must also be intelligently chosen, and a prolonged lying of the cloth in a wet condition is to be avoided under all circumstances. The steam lustreing is to be limited to the smallest degree, since steam also has a tendency to turn white wool yellow; in fact it should be avoided altogether if possible, and the cloth simply passed over the steam table. If not possible to do this, however, use only a low steam pressure, and allow the steam to pass through the roller until the cloth is thoroughly saturated with it. Then remove the cloth at once from the roller, and let it cool. A white mix, however, will always become more or less yellow by steam lustreing.

—The Pascoag, R. I. Herald has recently published a souvenir edition, which is highly creditable production. It contains a history of the early cotton and woolen manufacturing industry, which centred in Rhode Island and Southeastern Massachusetts, in its infancy in this country, and many of the successful plants in the interesting old town of Burrillville, are direct successors to enterprises established scores of years ago. This edition is profusely illustrated with views of various mills, and prominent men who have been identified with the town of Burrillville and Pascoag. It consists of 28 large pages, full of interesting reading matter, and reflects great credit on the enterprise of the publishers, and must be a source of gratification to the townspeople.

Brown's Improved Double Acting Brushing Machine.

The Parks & Woolson Machine Co., of Springfield, Vt., are the builders of the machine shown in the accompanying illustration. Like all the machines from their shops, it is built in a very substantial manner, on iron frames, with large sized shafting, wide faced pulleys, double lagged cylinders, filled



DOUBLE ACTING BRUSHING MACHINE.

with superior bristles, set with wire. The machine is built with one or two cylinders, as may be desired, and an improved steam vapor attachment can be applied if ordered.

Quite recently there has been added to this machine an entirely new device for controlling the application of the cloth to the cylinders. The cloth touches each cylinder twice, thus doubling its capacity for work, and may be applied to each cylinder as heavily or as lightly as desired. The improved scray to hold and guide the machine is superior to the pattern formerly used. By throwing back the top, a table is formed, on which to lay the cloth to be run in while the other piece is coming out well folded, or the cloth can be wound on a roller that runs against the back cloth beam.

Brown's patent flock cleaner takes off the flocks and lint as the cloth comes from the machine, leaving it clean and ready for the press. In spite of the addition of these improvements, we are informed that the price of the machine has been some what reduced.

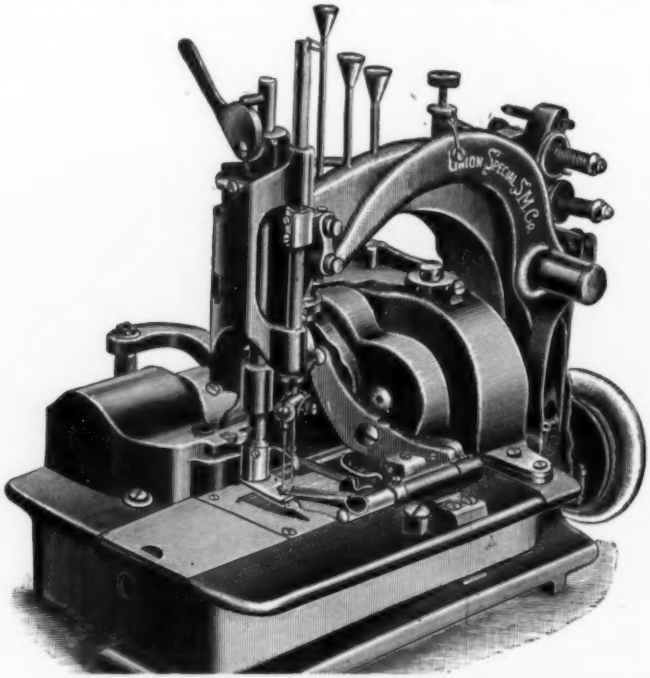
—The Hillsborough Mills, Wilton, N. H., have lately added two Apperly feeds with all the latest improvements, built by Geo. S. Harwood & Son, of Boston, Mass.

—The Contoocook Mills Co., of Hillsboro Bridge, N. H., have added on their finisher cards four Apperly feeds, built by Geo. S. Harwood & Son, Boston

SCOTT & WILLIAMS,

ESTABLISHED 1865.

Builders of all kinds of Knitting Machinery.



New Selvedging Bar Stitch Machine.

FOUR PROCESSES AT ONCE.

Selvedges the Edge, makes and attaches the Trimming and inserts Ribbon at one operation.

RUNS AT SPEED OF 2000 STITCHES PER MINUTE.

The United States Circuit Court for the Eastern District of Pennsylvania has recently issued a decree sustaining our Patents in this machine and on the Trimming made by it, and has granted an injunction against manufacturers in Philadelphia who were using an infringing machine.

The attention of the trade is therefore directed to this decision, as we shall proceed promptly against any others who violate our rights by the manufacture, sale, or use of infringing machine or trimmings.

Patented, United States, Dec. 25, 1888.
Patented, United States, Aug. 20, 1889.
Patented, England, January 1, 1889.
Patented, United States, Sept. 3, 1889.
Patented, United States, Nov. 26, 1889.
Patented, Switzerland, May 17, 1889.

Office: 2077 East Cumberland St., Philadelphia.

SHOWROOMS: 6th and Arch Sts., Philadelphia, Pa

KNITTING DEPARTMENT.

The Knit Goods Situation.

July and August are the months very much between seasons. Consequently the jobbing trade is now dull. Many of the conditions affecting trade are such as at any other time would justify the belief that the spring season would start early, probably about the middle of August, but at this time, however, the tariff question is so peculiarly balanced—momentarilly expected to drop on us—that it would be unsafe to say whether or not buyers will be early or late in placing their orders for spring knit goods.

Some jobbers, if asked now how business was, would answer that there was nothing but a "hand to mouth" trade, the condition of things all through the past season being uppermost in their minds. In the best of times, however, this must be said of that period at the closing of one season before the opening of the next.

It is only reasonable to believe that though the opening work in the spring knit goods may be done in a straggling, indifferent manner, without, perhaps, much courage, yet it is quite safe to presume that before the season is well along we will see an end to that much dreaded "hand to mouth" business. The tariff is the reason of it all. Will not some bill be passed by Congress before that time?

Up to the first week in August we had been unable to learn of any samples of light weight goods for spring being shown.

WESTERN AND NORTHWESTERN.

The business situation is variously repo'ted from western sections of the country.

While now it is the middle season and the condition of all sections are much the same, it is a matter of some questioning what the total amount of fall business done with the West proved to be, in comparison with that of the East.

A careful investigation would show, we believe, that though the West did not buy as much as it would in better times, yet buyers in that section placed orders for comparatively many more goods than the Eastern buyers did, considering what each section would take in normal times.

Business is now reported fair by men who sell to western trade such goods as scarlets in underwear and in men's cheap goods, such as are used by lumbermen, laborers, and the Chinese in California.

During the past season and periods of depression, the West has furnished us with several examples of the success of nervy buying. We have in mind one buyer who went way ahead of almost every other in the country. He reports business with him as very good indeed, much ahead of other seasons,—a truly remarkable statement. He went into the market at the opening of the fall trade as if nothing was wrong in the whole country, preparing at the same time for a natural increase in consumption, with the result that he was early sold up "natural increase" and all. The same buyer starts in prepared to buy for spring as courageously as ever.

His methods are an example of the wisdom of "Get up and get."

SWEATERS.

Manufacturers in every line of industry are constantly looking, with eyes piercing the future, to discover new fields for their product, not with the

expectation of monopolizing the field for a life time, for in these days of sharp competition such monopolies are unheard of, at least, in the textile trades. Happy indeed is the agent who discovers first, or early, a new field for any class of his products and can hold it fairly free for a season or two.

Equally piercing are the eyes of the agent to find a new want that cannot be confined to localities. The sweater now offers this big field. Here indeed it would seem is a growing and a great demand.

When pedlers may be seen on the streets negotiating with teamsters, and other laborers, over the sale of a sweater. as they once did over overalls or a blouse, there is a lesson to be learned by wide-awake manufacturers. Sweaters are now made to sell (all cotton) as low as 25 or 35 cents, retail, and this extension of the trade, outside athletics, which in itself, is a growing field for the better class of goods, creates one of the largest fields of prospect in the knit goods line to-day.

HOSIERY.

The hosiery trade is affected the same as the general bnsiness of the country; it is in a lethargic state. Yet in looking around the market we find that some mills, by vigorous pushing, where they knew they had what the market would in ordinary times call for—good goods, a point above the ordinary—have made the past season a profitable one. We know of a number of instances too, with out calling names, which will serve to illustrate: one, a mill in New England, is running nights till nine o'clock, and now is meeting with a good trade on a class of half hose that sell all the year round, in scarlets, greys, blues, blacks. tans, and natural colors, all wool, worsted, and merino,—and at from 25 to 50 cents a pair, retail.

They are a special sock (the mill controls the machines), well made, well finished, and neatly boxed. And there is much in this last feature.

The other instances are a few Philadelphia manufacturers: while the writer is not as positive about their success, yet it is the opinion of certain men in the trade who ought to know that they are making it pay. Their case serves to illustrate, and to contrast the native optimism of Americans with that of the Britons. The market is dull—the British manufacturer cheerfully sits down and waits till it improves. Our Philadelphia manufacturers--who make seamless half hose, believing that every thing was coming round all right, early looked around to see how they could make their product cheaper. Long had they been aware that the field of the seamless hose, so recently the acme of perfection, was being encroached upon by the products of the newer and more superior machinery, and that the ordinary seamless machinery, sooner or later, must give way or make something else give way to it. These manufacturers, during the past season, and, may be, a little earlier, applied the axe to the old Shaker and Germantown cut goods, and it seems that they were successful in making an inroad with profit to themselves.

FOREIGN TRADE.

In Chemnitz and other foreign hosiery and knit goods centres, trade continues very dull, and all concerned are watching the outcome of events in America. They have their eyes fixed on that tariff bill. With or without a change in the tariff, or the more complete resumption of operations in the mills here, business would at once improve Chemnitz; but, in the event of the bill now in Congress becoming law, hosiery machinery would be employed to overcrowding, and prices would advance.

Prices in Chemnitz are now very firm, and it seems to be the universal opinion of jobbers and buyers in close touch with the foreign market, that prices are sure to advance there even without a new measure.

A number of the largest eastern buyers have lately returned from abroad. They believe that prices are bound to advance on the other side. They are of the opinion that fancy hosiery is not going to be "in it" this season, only staple goods. For some time past they have been aware that the Hermsdorfs are trying hard to form a trust, agreement or some combination with all other dyers of blacks, to control the output of hosiery dyed black. Knowing all these things, what have American buyers been doing abroad? Maybe Chemnitz will send us many 25, 35 and 50 cent goods this season.

The knit goods business in England is extremely dull.

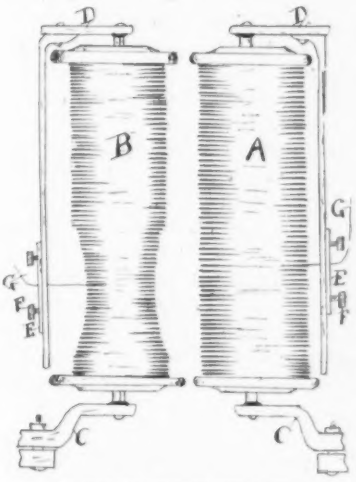
Practical Talks in Knitting.

NO. VIII.

TIGHT STITCHES.

Tight stitches in knit goods make uneven places. A tight stitch is one in which the yarns have been tightly drawn for some reason or other. It is a well known law in the fulling of textiles that the closer the threads are together, the less they will shrink in fulling; hence, when a series of tightly knit stitches are found in a sock, or other piece of knit wear, that place will not shrink so much in the scouring process, and a cockle or wrinkled place follows. In large knit wear, such as shirts and drawers, a cockle is undesireable, and will affect the sale of the goods. Sometimes the cockle will be but three or four threads in width, while again it may be an inch or two. Whatever the dimensions, wrinkled places or irregularities, are sufficient to cause the goods to be imperfect, and so we shall look at one of the principal causes of such places with a view of remedying same.

The accompanying cut shows how tight stitches are frequently formed in the knitting of hosiery. Two bobbins of yarn are shown in this diagram. One is marked *A* and the other *B*. The one marked *A* is perfect in form from top to bottom. Such a bobbin will feed off the yarn in a uniform condition, and if uneven places are made in the goods something else will be the cause. In the other specimen, however, we have a poorly formed bobbin, as will be seen. Such a bobbin will be the cause of tight stitches. First look at the frame work of the machine, which in this case is signified by the letter *C* at the bottom, and *D* at top. These parts hold the bobbin and its adjustment to the body work of the knitting machine. Attached to the upper portion, is the suspension bar and



CAUSE OF TIGHT STITCHES.

its relating parts, represented by *E*. The thread from the bobbin, marked *G*, can be seen winding off the latter and it passes through the eye in the guide and tension device, which is regulated by the adjustment screws *F*.

When the bobbin is built up evenly, the yarns pass through the eye of the regulator and guide all right, but soon as an uneven place appears in the bobbin, the delivery is affected and the tension on the yarn changes and a different kind of stitch is made, usually tighter. The reason is quite evident. Take bobbin *A*, for instance, and as the yarn is uniformly wound upon it it follows that the yarn will uniformly wind off from it. But in bobbin *B* the conditions are different. The upper

portion of the bobbin is all right, and so is the extreme lower, but in the centre the diameter is decreased as a result of the carelessness of the spinner who has allowed the bobbin to run with the end broken for a time. The guide tension and relating parts being set to accomodate the full size of the bobbin, the same cannot do effective work for the low place in the same bobbin; and so the result is that the thread is drawn tighter, and being tighter, the needles form a loop of smaller size, and there results what we term tight stitch, which means loops of smaller size than the machine is set for. Were all the stitches tight, the goods would come off even in texture, but as part of the bobbin is the regulation size, part of the goods will have a regular stitch, and part a tight one, so uneven goods are made.

The remedy consists in calling the spinner into the room and showing him the effect of his careless spinning. The bobbin has got to be worked off in some way, and if rewound is likely to be about as bad, so the knitter must use it, for every bobbin represents just so much money and cannot be wasted. Careful spinning of the yarns will obviate one of the principal causes of tight stitches in knit wear.

Spots in Sulphur Bleaching.

Editor of The Textile World.

For the purposes of our business we built a brick-sulphur chamber some months ago in which yarns and webs are hung to be bleached after having been washed. In general this worked satisfactorily, but we were at times met with defects, the origin of which puzzled us. The nature of same was that spots in the web appeared covered with a powder which, in shaking or rubbing off, left the place tender. Closer examination showed that the roof of the chamber was not perfectly tight but that, after heavy rain-storms, certain amount of moisture would gather; and those whom we consulted, as well as ourselves, came to the conclusion that the admission of moisture to the fumes of sulphur had produced a chemical change and action similar to that produced by sulphuric acid, resulting in eating out the cotton where it came in contact with our web, and leaving the wool intact.

To overcome this difficulty we had the tin stripped off the roof and an asphalt covering substituted. We also lined the sides of this brick-chamber with wood and placed paper on the under side of the roof, and thought by thus excluding all moisture to have overcome this difficulty completely; and while we have done so in a large measure, yet it has again appeared at times and we confess that we are at our wits ends how to remedy it. This trouble does not, by any means, affect all the goods, but appears only in isolated instances. The sample enclosed shows the result after rubbing the web. Can you advise us in the matter? If you can suggest any experiments or change to be made, please do so. — MILLS.

***

In our opinion, the difficulty that our correspondent complains of in his brick bleach house, is not caused by a leaky roof, but the trouble comes from within. When the atmosphere is heavy and contains a great deal of moisture, the sulphur fumes in the bleach house do not rise freely, and drops of moisture impregnated with the sulphur accumulate on the roof of the bleach house just as water accumulates on the outside of a tumbler in muggy weather. When these drops fall on the cloth, the cotton is attacked and spots result, if the moisture is allowed to remain for any length of time.

This is a great trouble with all stone or brick bleach houses, whether plastered or not. Wooden buildings for this purpose are much better. Several years ago our correspondent "Old Supt." wrote quite exhaustively on this subject, and gave minute instructions how to build a model wooden bleach house.

The difficulty complained of by the —— Mills can probably be obviated by thoroughly rinsing the cloth when it is taken out of the sulphur room, and

before sending to the dry room. In time of muggy weather a device recommended by "Old Supt." could doubtless be used to considerable advantage. It is very simple, and consists of boring holes of different diameter, from half an inch to an inch in diameter, in the bottom of the door, as low down as convenient. Over these holes rig a slide, so that they can be closed tight, or one or more holes opened for the admission of air, as may be desired On the level of the eye in the door insert a light of glass, so that the man in charge of the bleaching can see what is going on in the bleach house. If he notes that the chamber is "sweating," so to speak, and that the fumes seem to hang heavy, let him admit a little air through the slide. It may only be necessary to open the smallest hole, or in very bad weather it might be well to open all the holes. This wrinkle could be tried at very little expense, and our well-posted informant assures us that he has employed it with unvarying success.

[ED.

LATER. The—Mills, whom we answered by mail, inform us that the difficulty is apparently overcome by giving the cloth another rinsing, after taking it out of the sulphur room and before putting in the dry room. They say this seems to rid it of all particles of sulphur adhering to p'aces not thoroughly dry, which caused an eating out of the cotton, and that they have experimented on that line apparently with perfect success.

Knitting, Cone Winding, etc.

Continued from June.

(A slight error occured in my last letter by some means. In the 21st. line it should read 1832, when power was first applied to knitting in Cohoes, instead of 1854, as it reads. It was in 1854. in the same old mill, that this manner of weighing yarn was begun in Cohoes.)

HEAVY UNDERWEAR.

In the knitting of staple goods, such as heavy underwear, the margin between the cost of the stock and the price obtained for the goods when finished has shrunk very much in the past few years. It seemed to me when I was visiting some of the knitting mills on the 15th and 18th inst., in two knit goods centres, to use an old saying, "as if the bottom had fallen out." The prices that some goods were offered at seemed ruinous, but strange as it may seem, there are some manufacturers who now make a fair return on the capital employed. This is partly due to the lower price of material, but principally to the use of improved machinery, and more economical methods of manufacturing, and to obtain the best results in knitting or any other manufacturing business, it is very desirable that the manager, or whoever attends to the buying, should be able to decide upon the real value of the stock offered to him, for if he is not well posted in this, it is very often the case that of several grades of stock offered him he may select the cheapest, as to his eye it may appear as good as the other, and he may think he has done well in securing this lot at a lower price than formerly.

A short time ago I had an illustration of this where I was employed. I had purchased 80 bags of Australian lamb's wool from Mr. ——, in Boston. It was good, and worked beautifully, free from the little devil's claws, as I call the small burrs that are often found in it, and hard to get out unless carbonized. This day I was very busy, when a wool agent came to the office, and as the owner knew I was busy inside the mill, and that I had said something to him about needing some more fine wool in a few days, he thought he would try his skill in making a purchase. He did so from this agent. The day following I was shown the sample from which he purchased, paying 4 cents a pound more. I told him it was no good, it was not what we wanted, beings full of the devil claws, that our burr picker could not take them out, and to wire the agent not to send it. But it was too late, the wool had been shipped and was in transit, and when we received it, was as I said. We had to send it out to be gar-

netted, at an extra cost of 2 cents per lb., making 6 cents a lb. more than Mr.——'s, besides a loss of nearly 2 per cent. from these burrs, and the garnetting no real benefit to this fine grade of stock.

This goes to prove that people should not attempt what they are not capable of doing. Some may say that this was an extreme case, and so it was, but what happened in that case happens more or less every time a man does not understand his business. It is not wise for anyone to know more than they really do about some things. As Josh Billings says, "It's better not to know so much than to know so much that aint so."

COP YARN ON CONES

On the 15th, I visited a well equipped knitting mill, which cards and spins its own yarn, having the best of Davis & Furber machinery. The manager asked me wheather I liked cotton yarn on cops or cones. I told him what I preferred when we had to purchase it. The reasons I gave for using cones were these: first, there was a large amount of unnecessary waste made by winders "stabbing the cops," as I called it, winders that are not accustomed to them, who are in the habit of winding from the bobbins which are in use, and have to be in knitting mills which spin their own yarn. They don't take pains enough to put the cop perfectly straight on the skewer, and press down firmly until the point of the skewer comes straight out at the nose of the cop. If anyone prefers cops to cones, I would advise him to get the long tubes, for short tube cops are often broken, which makes waste, not being properly cared for in the packing, and sometimes in stripping the mules; also great care must be exercised by the overseer in regard to the way that cases are handled in transportation, and also that the winders take them out carefully and use them in a proper manner.

WINDING ON CONES.

As I have seen many different ways of winding yarn on cones, let me tell you, don't purchase yarn when it is traversed or crossed too much on the bottom or or large end of cone, as the yarn is very liable to break there, especially if it is as soft spun as I prefer it for knitting yarns for spring needle machines. Latch needles will bear more twist, and make good cloth on the latch machine, but the yarn for spring needles should be as soft as can be spun and wind well, and then the knitter will make good work, if he understands his trade.

When the yarn breaks, the knots should be properly tied. It should be a square and not a thumb knot, with the ends nipped off short. Sometimes winders will slip the ends, that is, instead of tying them, will merely warp them around the cone, and let it go. It is a very bad habit, and very liable to cause a great amount of bad work, where yarn is knit direct from the cone, by quarters coming off the frames where quarter savers are not used. Overseers of winding should see that no one does this, and as soon as anyone is known to do it, the the best thing is to send them out of the mill at once, as a warning to others, for manufacturers who are using cone yarn expect it to be as near right in the winding as possible, and if they are troubled with bad winding, rest assured you will not have their patronage long, for there are too many waiting anxiously to receive orders, and some offer to guarantee their winding or pay damages, because as a rule a mill making good yarn is well run in all its departments, including the winding.

There is another point about coned yarn which gives trouble occasionally. It is this. While the cone is filling, it will get chafed by the guides on the coner on account of its rubbing. These cones as soon as discovered on the machine should be taken off and rewound.

As before stated, I prefer cone winding to cops, although the same may cost a fraction more, according to quality and numbers, but manufacturers will derive a benefit from cone winding, and by returning all good tubes to the mill from which you purchase the yarn, they will either buy them or give you their equivalent in yarn. If you use short tubes, they are of no more value than as much sweepings, and some dealers even refuse to take them as paper stock.

OLD SUPT.

To be continued.

Knitting in South America.

BUENOS AIRES, June 22d, 1894.
Editor Textile World.

Several months have elapsed since I last wrote you anything regarding the knitting mill that was started here about 18 months ago, and no doubt some of the readers of your valuable magazine will be interested in hearing how it is progressing.

Knitting in the Argentine Republic is not what it is in the United States. In the first place it requires from three to four months to get supplies, and in the meantime we have to manage as best we can, sometimes having to work at a great disadvantage. Then, again, it is necessary to have a month's supply of yarn in the mill, another month's supply in transit, and still another in Europe ready for shipment, which is very unprofitable in different way owing to delays in steamers, etc., besides the extra amount of capital required to carry so much stock. However, there is one thing in our favor here: in the event of running short in any particular kind of yarn, another kind may be used, changing the style of the goods entirely without affecting their sales, as anything we make sells very readily.

The help here as a rule, are not up to the standard as compared with the States, being composed almost entirely of poor and uneducated girls, who are quite slow in learning the work. There are some, however, who now understand the machinery quite well, and make really good hands. Wages paid are about as follows: day hands, from 60 centavos (15 c.) to 1 peso(26c.), piece hands, 1 peso(26 c.) 2½ pesos (65 c.), working 10 hours per day. Working hours as follows: in the winter, (June, July and August) from 7 A. M. to 11 (1½ hours for breakfast), 12.30 to 6.30 P. M. Summer time, 6 A. M. to 11 A. M. (2 hours for breakfast). No half holidays on Saturday.

We have made a number of improvements and changes during the past six months, the most important being the installation of an electric light plant, consisting of two dynamos, about 300 incandescent and six arc lights, and a plant for making boxes.

Instead of having office, store house and packing room in the mill, as at first, they have been removed to more commodious quarters in the adjoining building, giving us the entire mill for knitting and finishing rooms. The mill has two stories, and is 178x46 ft. We have also put in the following new machinery: 20 Hepworth loopers; 15 Champion crochet and sewing machines, also two of their rib sleevers; 2 Payne winders; also 10 extra cylinders (Crane); 6 Brinton & Denney ribbers for half hose, and have placed orders for more extra cylinders and some cuff machines which we expect will arrive in about a month. It is the intention to replace our winders with the Payne winders, at about the rate of one each month. Nearly all the machinery now in use gives entire satisfaction. We have discarded entirely some of the first machines and replaced them with better ones.

We are now turning out about 200 doz. men's underwear, 50 doz. ladies ribbed shirts, 150 doz. half hose, and 100 doz. ladies cut-feet stockings, daily. Our entire production is contracted for by one of the leading commission houses here for a term of years, and they have had no trouble whatever in disposing of all we can make at a good profit. There is an increasing demand for our goods. They are known in the market as the "Los Andes" goods, that being the trade mark of the "Fabrica."

I have lately gotten out some new designs with which the trade is much pleased, and they will be a good advertisment for the firm, as these are something new here. I have turned the management of the mill over to a son of the senior partner, and am now devoting my entire time to the knitting department and the teaching of a couple of young men to fix the machines, so they can take charge of that part of the work by Sept. 1st, as I expect to start for Boston about that date. My contract will have expired at that time, and I shall not renew. Mr. Welker, formerly of Philadelphia, who has been associated with me here, hav-

ing charge of the finishing department, will remain. While working in a foreign country is not so pleasant as at home, I cannot say that I really dislike it, but I have now been away from my family and home for nearly two years, and am quite anxious to get back.

The manufacture of hosiery and underwear in this country, which is still in its infancy, is a good paying business, there being, as you know, a very high tariff on all classes of knit goods. There are a number of other, but smaller, mills here, all using European machinery, that are doing quite well.

On my arrival at Boston, I shall take pleasure in calling on you, and will give you a review of my work here and such other information as I can.

Yours very truly,

EDWIN H. ELLIS.

Destroying the Felting Capacity of Wool.

A method has recently been used in France, which the inventors claim will entirely destroy the felting capacity of all woolen yarns to be used for hosiery. The method consists in using the combined effect of aluminium salts and steam. The former have already been used together with soda for the same purpose, with only partial success. The woolen goods, the shrinking capacity of which was to be neutralized, were entered in a bath of sulphate of alumina, and when completely saturated with this fluid the goods were then passed through a soda bath. The experiments of utilizing steam for the shrinkage of woolen goods are not new, but the combination of the two methods is new, and the assertion that this method will effectually annihilate the felting capacity, without impairing the fibre, is entirely new. Such a condition has heretofore only been produced by destroying the fibre at the same time, or almost destroying it, with strong alkalies, thus completely robbing it of its most valuable properties. For this reason the value of the method is doubted. The felting is based upon the pliability of the wool fibres—a property so well known to every fuller,—and it is difficult to see how aluminium salts and steam are able to destroy this property. The inventors assert, however, that the yarn, according to their treatment, is to be saturated with a solution of aluminium salt, after which it is stretched tightly and then exposed to an energetic steaming; and they claim that the method also has the same effect upon cloth.

Hosiery Boxes.

F. Schoettle, manufacturer of paper boxes for the hosiery trade, 310-12-14 Race St., Philadelphia, announces his business in our advertising columns. Mr. Schoettle is well known to Pennsylvania and New York makers of hosiery, and is perhaps the leading producer of goods in his line in Philadelphia. He informed us recently that his factory was never so well equipped for supplying to order all kinds of paper hosiery boxes, and every other variety of round and square boxes. Employing steam power, and patented machinery, he promises unrivalled promptness, lowest cash prices and best workmanship.

—We acknowledge with thanks receipt of a handsome desk ruler from the American Carpet & Upholstery Trade, of Philadelphia, the model journal for carpet retailers, jobbers and manufacturers. This well edited journal is one of the handsomest in typographical appearance of any trade publication, and the very liberal patronage bestowed upon it and its large circulation, give evidence of the estimation in which it is held by the trade which it represents.

—The M. A. Furbush & Son Machine Co., of Philadelphia, are building two worsted cards for Messrs. E. T. Steel & Co., Bristol, Pa.

—Seth Humphreys, of Lower Marion, Pa., has just added a 60 inch Bramwell feed, built by Geo. S. Harwood & Son, of Boston, Mass., on a new set of Furbush cards.

POWER DEPARTMENT.

O. R. YOUNG, M. E., Editor.

Bringing Up a Steam Plant.

BY REX.

NO. XXI.

DANGEROUS COMPRESSION.

"Is compression dangerous?"

Wishing to obtain, if possible, some confirming information to my own ideas on this subject, I propounded the above question to one of the best known engineers in the country.

"Mr. Rex," replied my friend, "that depends altogether upon the engine and the amount of compression. Had you asked me if it was economical, I could, perhaps, have answered you better."

"Well: Do you consider it economical?"

"Hold on there, Bro. Rex. One question at a time. 'Is it dangerous' came first, and we will tackle it," and here is his opinion on the subject.

Under certain conditions it most certainly is. Take, for instance, where there is any chance for a valve to lift from its seat; there is in excessive compression more than a little danger, for the reason that every time the piston approaches the cylinder head it drives the valve from its seat, and, when the valve commences to open, it comes back with a slap that in time would break any casting ever built.

"Don't believe it? Well see here: I saw it tried a few months ago on a pair of large engines, which I consider to be one of the best makes in the world, to-day, for four valve machines.

"This pair of engines were running condensing, and the 'setter up' in trying to rush the work through, had neglected to take time enough to adjust their bearings to make them run smoothly, and, in place of doing so by legitimate means, had crowded on an excessive amount of compression. In fact *excessive* is hardly strong enough to express it. What was the result?"

"Throwing aside all considerations of economy and looking at it from the danger stand point, we have as good an illustration of our point as we could desire. The engines ran quiet, and why shouldn't they? Take a race horse and tie its feet up in heavy pads, — he won't make much noise, but it is a decided drawback to his efficiency. In this case the engines ran very smooth until one day the pump gave out which supplied the condenser, and necessitated the running of those engines non condensing. There was immediately a clatter of valves which would drive a nail factory out of business as a competitor for noise. Not thinking for a moment that any serious trouble could result, the chief engineer very injudiciously allowed them to run in that manner, as a shut down was considered a very serious calamity.

"After a few hours the valve clatter was drowned in a series of crashes which shook the building and the engines were brought to a stop with all possible haste. On removing one of the cylinder heads it was found that the piston had struck something, but *what* could not be ascertained, as there was nothing visible in the cylinder but a dent in the head and a badly bent piston rod. Thinking the trouble all lay in this machine the rod was with much difficulty removed, and sent to the makers to be straightened (?)

"Just here is something which strikes me to be a foolish proceeding, for I do not believe it possible to so straighten a bent piston rod as to make it 'good as new,' and were one to become bent in my engines I would replace it with a new one regardless of cost; but this one was straightened and

replaced, and the engine started up after a thorough search for the cause of the damage, which disclosed the fact that a steel guide pin had been broken from the valve and was responsible for the accident. This pin was found later in a valve leading from the exhaust to the condenser.

"The pump, by this time having been repaired, was started up only to be stopped by an obstruction in its cylinder, and it was found that the guide pin of the other engine valves had passed through the cylinder of the second machine, bending its piston rod, though not so badly as the first. This rod, of course, had to be straightened and the pump repaired again.

"Now here are two breaks, both of which were decidedly dangerous, not only to the engine but also might have cost the engineer his life, and these are but two of many instances which might be quoted. Then, too, a moral might be drawn for the benefit of those who some times run their engines when out of condition, rather than to shut them down."

NOW AS TO ECONOMY.

There are as many ideas concerning the economy of compression as there are men to advance them, and everyone is morally certain that his idea is the correct one. The late George Corliss claimed that he wanted his engines to run quiet by perfection of adjustment, not by bottling them up; and for years used every means in his power to bring about as near a perfect right angle "heel" to his indicator cards as possible, which of course would denote no compression, and he succeeded in doing so to quite an extent.

Then came the advocate of enough compression to keep the clearance spaces always full, with the claim that it saved on condensation and also on direct steam, as the clearance spaces were always filled with exhaust steam and gave the direct an opportunity to act direct on the piston instead of being wasted in filling the clearance. This sounds technically correct, but it has been met with the theory that throwing direct steam into the exhaust *increased the moisture* and lessened its efficiency.

The next theory was advanced by a philosopher who claimed that compression should be enough to act as a perfect cushion to the piston, so as to let it down easily. Then another, who thought that by compressing the exhaust the piston would be given a push to start it on the return stroke. This seems much like a man trying to lift himself over a fence in a basket, and is probably about as logical.

Next came the long-headed, cute engineer, whose engines were thumping either at the crank or wrist pin, or some other kindred locality. With a knowing wink he took a wrench, moved his eccentric forward and, presto! His engine ran quiet as a cemetery. This method seemed much easier to the engineer than to work taking up his engines little by little to stop the pound, as it should have been, so he adopted the compression cure and recommended it to his friends.

Now I believe there is a happy medium to all this and also a point of economy which is reached neither by bottling up an engine or removing all compression.

If bearings are in proper condition a thump will seldom be heard, and they should be kept so; at the same time I admit just enough compression on my engines to cushion the stroke, and the less the better. In doing this the clearance spaces are always filled when the direct steam is admitted. I claim that it is about here where the point of economy is located, for it certainly takes coal to compress anything, and the question merely arises as to whether the loss is greater in furnishing direct steam to fill clearance spaces or in pushing the piston against enough exhaust to do it, and I am decidedly in favor of the latter.

I also claim that cushioning all jar prolongs the life of an engine. The vacuum enters into the question here, playing a very prominent part, and its bearing on the subject will be discussed later.

Cylinder Examinations.

AN IMPORTANT FEATURE IN RUNNING AN ENGINE.

Every engineer should keep posted as to the condition of the cylinders of the engines under his charge. How many engineers do this?

Many a small engine has been running for years without ever having the head taken off, and why is it?

Well, in the first place, the engineer is more or less of a green hand, though perhaps having run for years. He can start and stop his machine and keep it keyed up, further than that he has no desire to go.

In many instances he is paid a certain sum per week, nine or twelve dollars, much oftener nine; consequently he proposes to get along with as little labor as possible, and if he can cover up the glaring defects he lets the minor ones go altogether. Then again, he may be a man receiving extra pay for overtime, in addition to being paid by the day for his ordinary work. In this case, if he should put in more overtime than is necessary to keep his engine packed and keyed up, there is a row.

"What are you doing with all this overtime? Brown, Smith or Jones never had so much of it."

"Well, I had the cylinder head off Sunday."

"What for?"

"To see how it looked inside."

"Do you suppose we are going to pay you for coming in here and looking at the engine Sundays?"

This and similar talk put him in a mood to let things slide instead of keeping them up; so he does not trouble his engine any more than is absolutely necessary to keep her from shaking the shop down.

If this is the case with small engines, it is equally so on large ones, and many of them are run year after year without being looked at, partly on account of the labor involved in removing the heads, and partly to keep the running expenses down to a minimum. But does it lessen the expense? It may, so far as the pay roll is concerned, but at the same time may be building up cost on the coal pile or storing up damage which will call for heavy outlay on repairs before many years.

How does it affect the coal pile? Well, in many ways. If your springs in the piston get weak or stuck, or your rings are not in good order, the steam is going to blow by the piston and part of its force will be wasted, which can be easily understood by an exaggerated illustration. If you take a cylinder 24 in. in diameter and attempt to run in it a piston 22 in. in diameter your steam will fill both ends at the same time, consequently no propelling power will be exerted.

You have never seen engines of this kind, of course, for they would not run, but I have known several which were rapidly approaching this condition, and every hair breadth you go in this direction is a loss of power, so any one can see how important it is to keep a piston properly fitted to the cylinder.

Then, again, the weight of the piston on all horizontal engines has a tendency to wear the cylinder downward, and cause the piston to drop. On that account, if not attended to, it will soon wear itself out of line, which will cause considerable trouble in keeping the stuffing box packed, and if allowed to run too long it will drop so far as to cause a rocking motion over the stuffing box, being drawn to a level by the cross head when near the crank end, and settling down, or dropping at the other end. This of course will not only wear the stuffing box badly, but on an engine which runs "over" will put an unlooked for strain on the top slide, and should the gibs be kept not quite tight it will cause a pound at each end of the stroke. Where if the piston were properly centered in the cylinder it would only bear on the bottom slide and run much more smoothly.

One has little conception of how soon a piston is liable to get out of order when not looked after, even though the engine may not be over worked. I have in mind a large engine which had been

run only three months when I took charge of it. At the first opportunity I took the head off; following the theory that every engine should have its cylinder examined within three months after being started up, and the condition we found this one in bears out the the wisdom of the rule.

First we found the cylinder some what scored though not grooved, but it undoubtedly would have been if allowed to run a few months longer without looking after. This scratching or scoring, we attributed to poor cylinder oil, in fact it must have been the quality, for the quantity used had been nearly double what it theoretically should have been, which is another instance of where it will not do to follow theory too closely, but mix it with good practical sense, though let me say just here, that I consider an excessive quantity of oil in a cylinder almost as bad as too little.

Then we found one of the rings badly demoralized, being broken in several pieces. How this was done we have no clear idea. Had it been broken once or twice it would have caused no particular surprise, but to find so many pieces and all practically at one end of the ring, rather left us at sea as to the cause of it; in fact, we have been able to find no good theory, home made or otherwise to account for it yet.

Then the centering rings which had kept the rings from twining around on the piston were both gone. Why and where to I cannot state, but the condition gave us the greatest surprise, for so far as use was concerned they were about as effectual as hoop iron, having not the slighest spring in them.

This we found later to be the fault of the builders who had neglected to temper them, and knowingly sent them out, expecting that they would not be examined for a year or so, when the fault would be laid elsewhere. Of course, the man who set the engines up knew this, but it made not the slightest difference to him, which is an illustration of how work is often done when it is not closely looked after by interested parties.

And, lastly, we found the piston out of centre, which was a foregone conclusion when the condition of the springs was known.

Now supposing that engine had continued to run for a year or two as many are allowed to do before being examined, what would have been the result? Why that cylinder which cost over a thousand dollars would have been ruined. It would have been badly grooved and worn much out of round, for that piston is a heavy one. The stuffing box would have been worn oblong, and we should have probably found it nearly impossible to have kept it packed. Add to extra expense for coal consumed in cutting the cylinder, the amount of power wasted by the steam blowing by the piston, and you will readily see why it is necessary, and also economical, to examine your cylinders frequently, even though you find they only require "looking at."

The Swain Water Wheel.

The illustration represents a pair of 48-inch Swain horizontal water wheels, built by the Swain Turbine & Mfg. Co., of Lowell, Mass., and put into the No. 2 Harmony Mill, Cohoes N. Y., developing 450 h. p. under 18 ft. head.

They were started up last August and have been running constantly ever since, giving the best of satisfaction; so much so in fact that the Harmony Mill Co. have given an order for a pair of 36-inch wheels for their Ogden Mill.

The two driving pulleys, as shown, are 11 feet in diameter with 27-inch face, and run at a speed of 117 revolutions per minute. Their weight is three tons each.

The wheel casing, 9 ft. in diameter and 14 ft. long, is made of cast iron and plate steel, and rests on heavy cast iron girders. The feeder is also made from ⅜ in. steel plate.

The friction gears shown are for driving a large size No. 4 fire pump, which will work in case of fire as long as the wheel runs, having no belt to burn.

The water is taken in canals from

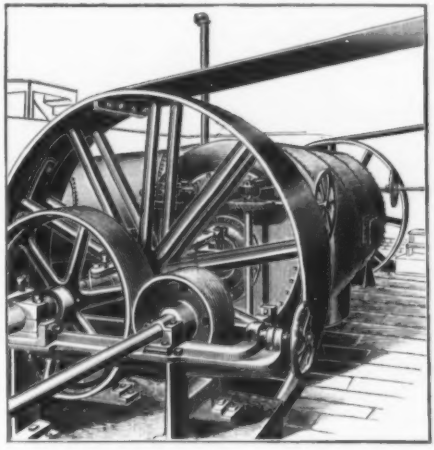
the Mohawk River, and the Harmony Mill with their 275,000 spindles are run wholly by water power.

Quite different from most double wheels, the pair in question discharges its water into a central draft tube having a central division that runs to the bottom of the tube, thus making independent draft tubes for each wheel. The wheels also run independently of each other, and belt directly on to the main line of shafting in the mill.

The hand wheels shown are for operating the gate with all of its working parts; these are all out of water, being on each end of the casing heads, where they are easily oiled and taken care of.

The first Swain wheel put in at Cohoes was installed by the Cohoes Gas Light Co., in 1889. This wheel has a 4-inch steel shaft, and is making 460 revolutions per minute, under a 90 ft. fall. The fine work of this wheel led the Harmony Mills to investigate the Swain wheels, and as a result of careful investigation the above orders were placed, also those for the Cohoes Knitting Co., and the Hope Knitting Co.

Another prominent indorsement of the Swain wheel, is their adoption by the B. B. & R. Knight Co., who have placed 24 of these wheels in their mills, within the past five years, making thirty, or 4000 h. p., in all of Swain



NEW CENTRAL DRAUGHT TUBE HORIZONTAL WHEEL.

A very noteworthy illustration, of the great advantage of this was seen last winter in the very little trouble they had with anchor ice on these wheels, in comparison to those of other makes they have been running.

The Harmony Mills being among the largest, and the most successful in the United States, have gained the reputation of putting in nothing but the latest improved and best machinery, both in motive power and other lines, and the reputation the Swain horizontal wheel has gained in the past few years, only confirms their judgement in adopting it.

wheels in this company's mills, one of which has been running over 22 years.

As an instance of what this company is doing at home, it might be mentioned that among other Lowell mills, the Boott corporations are running 3300 h. p. of Swain wheels, and the Hamilton corporations are at present putting in a 72-inch wheel, making their third of this make.

—The Medford Mfg. Company, of Medford, Mass., are running four 60-inch Bramwell feeds of improved construction, built by Geo. S. Harwood & Son, Boston, Mass.

Using the Indicator.

Editor Power Dept:

Dear Sir: Can you give me a few essential points which should be observed to enable me to get the best work with an indicator, and oblige.

D. NORTHWICH.

***

As a result of several years practical work and study, we have found that a few general rules must be observed to obtain any thing like satisfactory indicator work.

The indicators should be connected as near the cylinder as possible (or with the least piping and right angle bends, as these make a noticeable difference in a card.)

Great care should be exercised to avoid lost motion by stretching of cords or loose joints in reducing motions, for many pantographs are miracles of inaccuracy, owing to wear at the joints, and yet are in almost daily use.

All water should be blown from the indicators and connections before the cards are taken, as water will materially change the lines on a card.

Cards should be taken from both ends of the cylinder at the same time, or, if two engines are coupled, from both machines simultaneously; a few seconds may make a great difference in the power, occasionally.

A fine pointed pencil should always be used, as the width of a line may make quite a difference in the card measurement.

None but the best indicators should be used and these should be kept accurate, for it is useless to measure power with inaccurrate scales; one might as well guess at it without the trouble of weighing first, and to set the valves of an engine with inaccurate indicators has led to wasting many dollars worth of fuel and sometimes even to danger.

The most accurate way to measure a card is by the planimeter, and, as accuracy is essential, the attempt to mark off a card with a lead pencil into ordinates and then measure them only increases the liability of mistakes. [ED.

Pneumatic Watchman's Clock.

The Pneumatic Watchman's Check Company, of Columbus, Ohio, are putting upon the market a device in the way of a watchman's clock which is radically different from those which have preceded it. It is a register recording the rounds of the watchman through the instrumentality of air. The accompanying illustrations show the parts of which it is composed. Fig. 1 shows the recording merchanism or dial

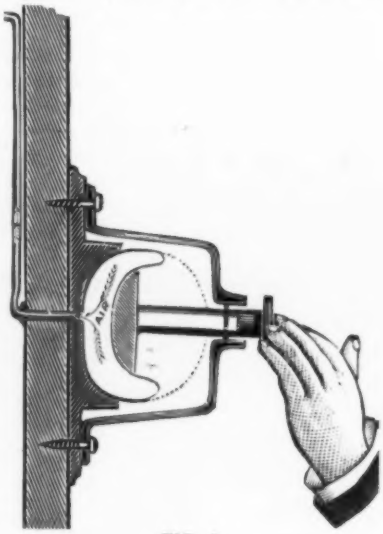
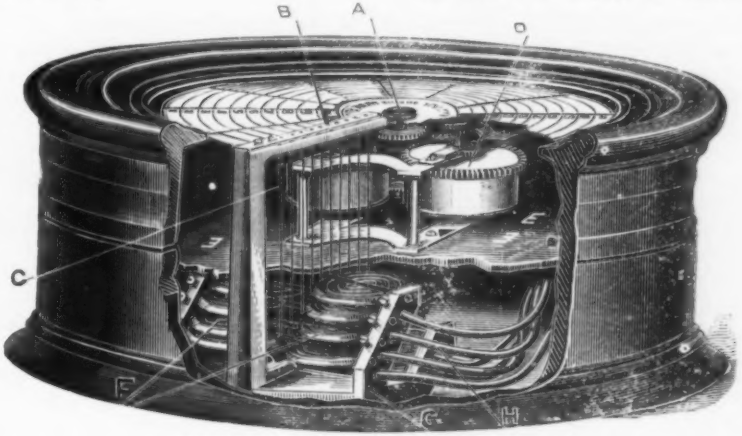


FIG. 2.

which is located in the office or at the central station. Fig. 2 shows a key of a station being pressed by the watchman, the effect of which is to record upon the dial the fact that he was at the station at a certain time.

A paper dial is placed on the hour post of an eight-day duplex movement brass clock mechanism, and is there held in place by a dial holder. There is a slot in the guide arm through which also the paper dial moves and which holds the dial in place while being punctured by the needles, which are attached to diaphragms or thin-faced metal air chambers conected with the tubes from the several stations. These diaphragms are made of spring German silver in sheets, and are no more than

2-1000 of an inch in thickness. They are shaped in the form of circular corrugations, and these corrugations in the metal permit the air chambers to expand slightly when pressure is transmitted into them through the connecting tubes extending from the diaphragms to the different stations through the buildings. This pressure is obtained by inserting a split key into the cast-iron station and pushing it lightly, as shown in Fig. 2. Using a key in this way makes it possible for the watchman to give the proper signal and prevents all tampering with the apparatus by those who do not have the key.



PNEUMATIC WATCHMAN'S CLOCK (FIG. 1.)

As the bulb in the station is compressed by the key, as shown in Fig. 2, pressure is exerted against the corresponding diaphragm, which drives upward the needle connected therewith, and which punctures the paper dial in a circle bearing the same number as the number of the station. The hours are marked on the paper dial by radial lines, and therefore an inspection of the dial sheets show at once at what time the record from any particular station was made. In the installation of this device each station has a separate line of tube extending from it to the recorder and a separate diaphragm and needle, having the same number as the number of the station. Proper provision is made in the construction of the diaphragm to equalize the air pressure due to the expansion and contraction produced by changes in temperature. Provision is also made by which all danger of the needle remaining in the up position long enough to destroy the paper dials is removed. The makers assert that it is impossible to hold the needle when penetrating the paper dial longer than five to eight seconds. A by-pass allowing the air to escape, causes the needle to drop back short of this time, even though the fingers still remain upon the key. The lead tube from the station to recorder is protected against damage by proper mouldings.

The device is adapted to receive a record from any number of stations up to and including fifty, all recording on a single dial. The points of advantage claimed for this check include the following: It is so simple that it is almost impossible for it to get out of order; there are no batteries and no complicated mechanism; there is no expense of maintenance; any mechanic can install it; all the parts are interchangeable and can be replaced without the assistance of an expert should accident render repairs necessary.

—Messrs. Cann & Saul, 516 Commerce St., Philadelphia, are sole agents for Detroit Steel & Spring Company, and cary the company's complete lines. They are also agents for Reynolds Bros. hand cut files. The Detroit Co. make a famous cast steel for tools, springs and machinery.

Water Towers and Tanks.

Louisville, Kentucky, has the largest plant in the country for the manufacture of tanks, water towers and similar works, viz., that of the W. E. Caldwell Co., which has recently perfected an improved method of construction for the elevation of water reservoirs for fire protection and other purposes, which for simplicity, strength and durability promises to almost revolutionize the tank and tower business.

The increasing use of automatic sprinklers necessitated the introduction of an improved system of tank building, and the Caldwell Co. have been in the front rank for perfecting this type of apparatus. Mr. W. E. Caldwell is the inventor of the new tower.

The Caldwell Co. first began the machinery business ten years ago, making a specialty of distillery work, and by the requirements of this work were led to build their own special machinery, and branched out into the tank business. By the excellence of their work, and their skill in pushing its merits, they have built up a business with all lines of manufacturing establishments and industries using tanks, towers, etc., while their new system is especially adapted for water supplies in towns and villages, and for hotel and private residences.

The special feature of their work consists of a combination of their patent sectional all-iron tower, with either a wood or iron and steel reservoir on top. These sectional towers are made of hollow cylinders of iron, requiring the least amount of material while giving the greatest strength. There is practically no resistance to wind storms, and the nature of the construction enables them to be sold at a low cost, and, made as they are, they present a marked contrast to the ugly and unsightly clumsy wooden tanks which so frequently mar the appearance of an otherwise handsome building. They have recently set up in their yard, preparatory to shipping, a 12-column, sectional, all-iron tower, 75 feet high, and supporting a 200,000 gallon all-steel reservoir.

The peculiarity of the construction enables them to be set up without the employment of any but workmen of ordinary intelligence. They are taken apart and packed very compactly for shipment, so that distance is no obstacle to their use. They are made in a great variety of sizes, varying from 15 to 100 feet in height, and for reservoirs or tanks of from 1500 to 200,000 gallon capacity, in sections of 12 feet each.

Every factory needing a tank for automatic sprinklers or other reservoir purposes should investigate this system, as we believe it is a most excellent example of scientific construction.

Besides building these improved water towers, the W. E. Caldwell Co. are manufacturers of a complete line of round and rectangular wooden tanks, tubs for all purposes, including dye tubs, vats, washing and scouring tubs, etc.

Banks Look for More Active Business.

About the only feature of interest affecting the money market is the extremely conservative course pursued by some of our banks whose deposit line has of late considerably increased, especially through deposits by their largest city customers. Attention has been called the last two weeks to the fact that the trust companies were out of the market for time money and for commercial paper for the reason that early in the month they were disbursing interest and dividends, and more recently they have been meeting large drafts from merchants who, having kept their money with the trust companies for the small interest they received, were now withdrawing these balances for use in their business. This withdrawal of money by merchants seems this week to have extended to those of the associated banks in which a few depositors have in the aggregate large sums of money. There is therefore a feeling among bank officers that their cash should be well held for employment in business, which is improving now, and is likely further to be stimulated on the ending of suspense over the tariff. —[Commercial and Financial Chronicle.

COLORS AND DYEING.

This department is under the supervision of Mr. EDWARD PRAG, and all communications intended for it should be addressed to him either at our Philadelphia office, 240 Chestnut St., or Laboratory, 2220 Lambert St., Philadelphia.

Department of Chemistry.

In the last three or four months we have received at our laboratory inquiries in regard to the methods of manufacturing certain chemicals, and have also received inquiries regarding the charges for making analytical tests, such as testing waters for the use of the dyehouse, etc. Until the present time we have paid little attention to this class of work, as our time has been entirely taken up with the perfecting of our dye department.

We have now completed our laboratory by adding the most modern appliances for dyeing and chemistry, and will henceforth be enabled to give special attention to the above mentioned class of work. We also wish to mention that we are indirectly associated with two very eminent and well-known chemists in Philadelphia, Pa., Professor F. A. Genth and Dr. Franklin, who will co-operate with us in handling the chemical work sent to our office.

Experimental Dye Sheet Recipes for August.

A Sample Color Sheet is issued each month from the TEXTILE WORLD Laboratory, containing Samples of stock, yarn, fabrics etc., which have been dyed in our laboratory according to the recipes given in the TEXTILE WORLD. We show the latest colors and methods from month to month. The extra cost of the Dyed Sample Sheets is $1.00 per year. Samples from the following recipes are shown in this month's sample sheet.

No. 13.

Pale Yellow on Woolen Yarn.

DYED WITH ANTHRACENE YELLOW C. POWDER; WM. J. MATHESON & CO., 178 FRONT STREET, NEW YORK.

(For 100 lbs. of yarn.)

Prepare a bath containing,

5% Acetate of Ammonia,
$\frac{2}{10}$% Anthracene Yellow.

Enter yarn at 120° F., and turn the same slowly until the temperature of the bath is 200° F. When the bath is nearly exhausted add to the same,

3% Bisulphate of Soda,

Then boil until the bath is exhausted. Lift, wash and dry.

No. 14.

Terra Cotta on Woolen Yarn.

DYED WITH 5% TERRA COTTA; JOHN J. KELLER & CO., 104 MURRAY STREET, NEW YORK.

(For 100 lbs. of yarn.)

Prepare a bath containing,

2% Bichromate of Potash,
1½% Avery's Lactic Acid.

Enter at 170° F., and boil for one hour, then lift and wash, and prepare a fresh bath containing

5% Terra Cotta,

Enter yarn luke warm, raise temperature slowly to a boil, and dye at the boil 3 4 hour.

Lift, wash and dry.

No. 15.

Olive Green on Wool Yarn.

DYED WITH CYANINE B VICTORIA YELLOW & CHROMOTROP 2 R; SCHULZE-BERGE & KOECHL, 79 MURRAY STREET, NEW YORK.

(For 100 lbs. of woolen yarn.)

Prepare a bath containing,

4% Sulphuric Acid,
10% Glauber's Salt,
$\frac{5}{16}$% Cyanine B,
1⅛% Victoria Yellow,
$\frac{1}{16}$% Chromotrop 2 R.

Enter Yarn at 140° F., give 4 turns, raise temperature slowly to a boil and boil one hour. Lift, wash and dry.

No. 16.

Purple on Woolen Yarn.

DYED WITH CHROMOTROP 6 B, & CYANINE B; SCHULZE-BERGE AND KOECHL, 79 MURRAY STREET, NEW YORK.

(For 100 lbs. of yarn.)

Prepare a bath containing,
4% Sulphuric Acid,
10% Glauber's Salt.
$\frac{3}{4}$% Chromotrop 6 B,
$\frac{3}{16}$% Cyanine B.

Manipulate the same as in recipe 15.

No. 17.

Dark Scarlet on Wool Flannel.

DYED WITH GERANINE B B; E. SEHLBACH & CO., 77 WILLIAM STREET, NEW YORK.

(For 100 lbs. of flannel.)

Prepare a bath containing.
10% Glauber's Salt,
2% Acetic Acid,
3% Geranine B B.

Enter flannel at 110° F., run four ends, raise temperature slowly to a boil and boil for one hour. Lift, wash and dry.

No 18.

Dark Blue on Loose Wool

DYED WITH HEMOLINE X; WM. J. MATHESON & CO., 178 FRONT STREET, NEW YORK.

(For 100 lbs. wool.)

Prepare a bath containing,
$\frac{3}{4}$% Bichromate of Potash,
6% Alum
3% Oxalic Acid.

Enter wool at 170° F., pole well, raise temperature to a boil, boil one hour poling the wool from time to time. Lift and wash, and prepare a fresh bath containing.
5% Acetic Acid,
4% Hemolin X

Enter wool at 170° F., pole well, raise temperature slowly to a boil and boil one hour. Lift, wash aud dry.

No. 19.

Black on Woolen Flannel.

DYED WITH DOUBLE DIAMOND I HEAMATINE; INNIS & CO., 120 WILLIAM STREET, NEW YORK.

(For 100 lbs. of flannel.)

Prepare a bath containing,
3% Bichromate of Potash,
1½% Avery's Lactic Acid.

Enter flannel at 160° F., raise temperature to a boil and boil one hour. Lift and wash, and prepare a new bath containing,
12% Double Diamond I Heamatine,
½% Fustic.

Enter flannel at 130° F., run four ends, raise temperature slowly to boil and boil slowly for one hour. Lift, wash and dry.

No. 20.

Reddish Brown on Cotton Goods.

DYED WITH SAMBESI BROWN G; NEW YORK & BOSTON DYEWOOD CO., 55 BEEKMAN STREET, NEW YORK.

(For 100 lbs. cotton goods.)

Prepare a bath containing,
20% Glauber's Salt,
3% Soda Crystals,
3% Sambesi Brown G.

Enter goods at 150° F., run four ends, raise temperature slowly to a boil, and boil one hour. Lift, wash thoroughly and dry.

No. 21.

Pale Blue on Cotton Goods.

DYED WITH SAMBESI BROWN G. AND CHICAGO BLUE B; NEW YORK & BOSTON DYEWOOD CO., 55 BEEKMAN STREET, NEW YORK.

(For 100 lbs. cotton goods.)

Prepare a bath containing.
20 % Glauber's Salt,
3 % Soda Crystals,
$\frac{1}{10}$ % Sambesi Brown G,
$\frac{1}{10}$ % Chicago Blue B.

Manipulate the dyeing the same as in recipe 20.

Sambesi Brown G is a new product of the above firm; the color can be diazotized and developed into a dark brown, or the color can be combined with congo brown, brilliant congo R and chrysamine G, and so obtain pink and mode shades.

No. 22.

Black on Cotton Goods.

DYED WITH OXY DIAMINE BLACK N; WM. J. MATHESON & CO., 178 FRONT STREET, NEW YORK.

(For 100 lbs. of goods.)

Prepare a bath containing,
15% Glauber's Salt,
5% Soda Crystals,

6% Oxy Diamine Black N.

Enter cloth at 140° F., raise temperature slowly to a boil and work cloth for one hour at that temperature. Lift, wash and dry.

No. 23.

Orange on Loose Cotton.

DYED WITH THIO ORANGE G; C. BISCHOFF & Co., 80 FRONT STREET, NEW YORK.

(For 100 lbs. of raw cotton.)

Prepare a bath containing,

10% Common Salt,
2% Thio Orange G.

Enter cotton at 140° F., pole well, raise temperature to a boil and boil one hour. Lift. wash and dry.

No. 24.

Yellow on Raw Cotton.

DYED WITH THIO YELLOW G; C BISCHOFF & Co., 80 FRONT STREET, NEW YORK.

(For 100 lbs. raw cotton.)

Prepare a bath containing,

10% Common Salt,
2% Thio Yellow G.

Dye out as in recipe 23.

Roundabout Notes.

For the Textile World.

DYEING, PRINTING, BLEACHING AND FINISHING.

Cocoanut fibres have been more and more used of late years, and a few hints on dyeing them will be useful. Properly treated, the fibre takes as many and as bright shades as cotton or wool. On account of the small amount of tannin in it, there is a great affinity between it and the basic coal tar colors, and this while it facilitates the use of the dyes, is a difficulty in the way of getting uniform shades. All this is got over however by using very weak baths and boiling slowly for long periods, say for two hours.

***

On the other hand, the fibre has little affinity for acid dyes, so that with these it is easy to get level shades, although, of course, the advantage, as regards fastness, is altogether on the side of the basic dyes.

***

To get reddish or brownish shades of violet to a pattern, many dyers steep the yarn over night in 20% acetate of chrome, and dye with galleine. There is no necessity, however, to do this. It is quite sufficient to draw the yarn through the acetate bath, leave it covered up for five or six hours, draw it again through the mordant, and dye at once. Care must be taken that at each entry, the yarn is soaked throughly. A writer in Leipsiger Farber Zeitung however, condemns the whole practice as bad. Chromic acid always gives unequal dying, and galleine can be advantageously replaced by other dyes.

***

He recommends the following methods: Pass 50 lbs. of cotton yarn through a solution of 6 lbs. of turkey red oil in 6 gallons of water, or through 5 lbs. of sumac extract of 30° B. Take care to get a perfect soak, dry again at 120° F. Then heat with 1½ lbs of chalk at 120°, rinse, and dye with 2½ lbs alizarine bordeaux (Bayer) and 1¾ lbs. alizarine blue dye, cold, for an hour; then gradually bring to the boil during a second hour; rinse well and soap at 170° F.

***

The exact shade wanted is gotton by varying the proportions of the dyes. The more blue, the more violet is the shade; the more bordeaux, the browner the shade produced. Anthracene blue W B (Badische) is even better than alizarine blue. If, however, your prejudice will not allow you to give up galleine, use the turkey red oil anyway, and substitute chloride of chromium for the acetate.

***

A new process of fulling has been adopted by the Graeger factory, at Mulhouse. It is well known that the reason of soaping is to give the necessary smoothness, or slipperiness, so to speak, to the fibre. The inventors of the process claim that this is done better with certain salts, namely; the chloride of calcium, or magnesium. Not only do

they answer the purpose of soap, but the solutions are much cheaper and moreover do not evaporate (being hygroscopic) so that the time lost in replaceing evaporated water is saved. At any rate it would cost little to try this German idea, and it looks promising.

* * *

According to Falke the necessity of an indigo bottom in getting fast mode shades on carded yarn, arises from the absence of really fast anilines. Indigo is the most suitable ground also, because every imaginable shade may be gotton on it by using proper coal-tar colors. At the same time it is no easy thing for the dyer to avoid inequality, and this is the great stumbling block in indigo dyeing as a bottom for other colors. Faults in this way, unseen on the bottom, stare out glaringly when the other color goes on.

* * *

The writer in the Berliner claims that Gutbier's hydrosulphite vat, used with his vat-salt, obviates this mischief to a considerable extent. The salt seems to be an alkaline reagent which enables the fibre to take up more white indigo than usual, and also to act on white indigo much as Glauber's salt or common salt does on a substantive dye. A fertile source of inequality in yarn dyeing is wringing by hand, and Falke recommends Rudolph's yarn-dyeing apparatus to obviate the necessity of this.

* * *

Antibenzenepyeine is described in the current Berliner. It is used with benzene in chemical washing, and appears to increase the electrification of the latter body when rubbed on wool, and therefore the risk of explosion. It is a yellow liquid of specific gravity .746, and appears to consist of 10 to 12 percent. of magnesia soap, of unkown composition as regards its fatty acids, of 60 to 65 per cent. of benzene of specific grav. .7, and of unknown substance with a specific grav. .827 and a high boiling point. This is probably colza oil, as an imitative substance made with benzene, mineral colza and magnesia soaps in the above proportions was similar to, if not identical with, antibenzenepyeine.

Vegetable bronze colors are lakes, and can be got with either logwood or redwood. A boiled decoction of redwood is treated with a little carbolic acid and left to stand for some weeks. The clear liquid is syphoned off, heated, mixed with alum to the extent of about one fifth of the original wood, and left another week. A precipitate falls down which is filtered off, and then either completely dried or left as a thick paste. This is a color very useful to the leather dyer, and is applied with the brush after being mixed with 15 per cent. of strong gum. For a bronze, dissolve soap over a water bath in the least possible quantity of water. Add to this a bulk of melted white wax, equal to that of the soap solution, and dilute the hot mixture with water until, when cold, it is of the consistency of turpentine. To this the redwood paste is added, and gives a gold bronze on leather when polished after dyeing, and may be made waterproof by varnishing.

* * *

The Leipziger is asked how to redye blue which has faded in places, and replies emphatically that the color must be completely stripped and dyeing proceed *de novo*. No other plan has any chance of success. Aniline dyes are best destroyed with zinc dust. Stir up 20 lbs. of zinc dust and 3 lbs. of lime in water, and add as much boiling water as will take 5 lbs. of goods. Then allow it to settle, decant the clear liquid, make it boiling hot, put the goods in, leave them six to eight hours, rinse and then boil them with 14½ lbs. alum and 8½ lbs. tartar, for 1½ hours. They will then be nearly white. It need hardly be mentioned that these baths are used over and over again.

* * *

Black and brown are best removed with bichromate and sulphuric acid in a hot bath, to which the chemicals are added gradually. Most blacks treated thus becomes a yellowish brown. Many dyes are also removed very well with a 4 to 5 per cent. nitric acid bath. When the cloth, of whatever color, is stripped, it should be redyed with the original dyestuff used.

The treatment of cotton before dyeing with indigo should depend upon what size is used and how much. For ordinary sizing a three times repeated passage through a boiling bath containing 1 lb. soda for every 80 lbs. of cotton is generally sufficient. All the soda must be rinsed out and in particular cases a weak bath of hydrochloric acid may follow the rinsing. If any unsual substance, are in the size it is just as well to heat for four or five hours, at a pressure of from 15 to 30 pounds, in a solution containing 1 lb. soda to every 20 lbs. of cotton, following up with a thorough rinsing, the weak acid bath, and a final rinsing.

* * *

This will save lots of trouble, and is a really useful wrinkle for the dyer who has been puzzled with unequal results. He may take it as gospel that if the stuff goes into the vat alkaline, it will come out spotty. If resins or fats appear to have been used in the size, 2 lbs. of colophone should be added to the soda, having been previously dissolved in hot soda. Heavy goods should go in and come out of the vat perfectly smooth, and not twisted or crumpled in any way.

To Remedy Colors Which Dye Darker than Desired.

It sometimes happens in the dyeing of wool, when matching a given shade, the shade turns out darker than desired. In such a case a remedy must be found to correct the mistake. Sulphurous acid affords such a corrective, and is the best for the purpose, because it makes the shade lighter without in anyway attacking the goods. The most excellent results are obtained with dyes not fast against acids, whilst those that are fast against them—for instance the alizarine dyes—can partly be stripped with permanganate of potash.

Sulphurous acid has been found reliable for all colors and shades dyed either partly or wholly with natural dyestuffs, and the manner of its employment is very simple. A small test, which can be made in a few minutes will show whether satisfactory results can be obtained with a certain shade or color. If this is successful, the treatment in a more or less diluted cold bath is all that is required, and the defect is thereby corrected at once. In most cases a few quarts of an ordinary aqueous solution of sulphurous acid is all that is required. This quality is entirely harmless, as it is well known to every dyer that for bleaching wool with sulphur, two-thirds of the weight of the wool, of this aqueous sulphurous acid are used, without exerting an injurious effect. The shades produced with logwood are the most sensitive of all those obtained with the natural dye stuffs. All the browns and olive greens, especially those that were saddened, become paler and browner. Blue and black produced with logwood are readily reduced, and since the sulphurous acid removes the non-fixed dyewood, the goods are in this manner protected against rubbing off.

Oxy Dyamine Black N.

We draw attention to the practical demonstration of this black on the "Experimental Dye Sheet." This black is cheap and good and very easy to dye. Oxy Diamine Black N. dyes from a grey black to a deep black. When a small quantity of dyestuff is used, about 3 to 4 per cent, the black has a blueish tone. The color is fairly fast to light. Soaping will cause a slight bleeding, but by after-chroming the goods, the latter will be much faster to washing. There is no need nor can there be any better results obtained by diazotizing, as the various developers have no effect up the color.

Oxy Diamine N will dye half silk goods on which it will produce grey to black shades, both fibres being dyed uniformly. It will also dye linen and jute, the latter taking up the color exceedingly well; 3 per cent. will give a good black. Oxy Diamine Black N is soluble in hot water. This new black is sold by Messrs. Wm. J. Matheson & Co., 178 Front St., New York.

Dyestuff Review.

Double Diamond Heamatine I, of the firm Innis & Co., is creating much favorable comment among dyers, and the new product deserves all the praise it receives, as the practical demonstration in the July "Dye Sheet" proves. The sample on the sheet has been dyed with 5 per cent. of the firm's heamatine and shows an excellent deep bottom for the small per centage of heamatine used. The firm informs us that the price is not any more then usually is asked for such products.

Wool Blue, of the firm of Read Holliday & Son, has also drawn the attention of the dyers, on account of its strong tinctorial powers. Naturally the color is only good for cheap goods.

Brilliant Violet, from the firm of John J. Keller & Co., has been very much admired and there is no doubt that it is a beautiful violet. The color is dyed on a sumac bottom and ½ per cent. gives a fairly deep color, as shown on the July "Dye Sheet." The color is very fast.

We draw the attention of the dyers to the new brilliant Orange G, and Orange T. A, of the New York & Boston Dyewood Co. These orange colors are dyed in one bath with Glauber's salt and soda or soap As shown on the July "Dye Sheet" they are very brilliant and have a very strong tinctorial power.

There is not much news to chronicle, as July is usually an off month in the dyestuff trade, and our friends in the dyehouses do not care to handle the pen much in the hot days of July.

Novelties in dyestuffs.

Sambesi Brown G is the latest product placed upon the market by the New York & Boston Dyewood Co., 55 Beekman St., New York. Sambesi Brown G is a substantive color and dyes like all the colors of that class, with the addition of common or Glauber's salt. When dyed in the ordinary way Sambesi Brown G produces a corinth-brown, This new product may also be diazotized in the usual way, and then developed. Naphtol, amido naphtol ether, resorcine, toluylene diamine developers produce dark shades which are fairly fast to washing. Fancy mode shade can be produced by combining Sambesi Brown G with other substantive colors which are fast to light, such as Congo brown, Neutral grey, Chrysophenine, etc. The combinations with toluylene diamine which produce full catechu brown shades are of the desired yellowish brown tone without the violet cast. The firm claims the dye fast to washing, that it does not bleed into the white, and that it is very fast to alkali, acids and sunlight. For practical demonstration see August "Experimental Dye Sheet."

The firm has issued sample cards displaying twelve shades dyed on cotton yarn and cotton goods, which ought to be of great interest to the dyers.

Indigo Salt.

Indigo salt was principally used for producing blue and white, black blue and white print. To obtain blue and white, a color containing 2 1-2 to 3 ounces indigo salt is printed upon unprepared fabric and passes through hot caustic soda 25-28 degrees Tw.

The passing through the caustic soda should be done very quickly. The so obtained shades are about the same as those obtained with the ordinary indigo blue.

To develop indigo cold, the caustic soda should be about 38 degrees Tw.; in this way shades of unusual clearness are obtained. For the production of blue, white and black, indigo salt is printed in combination with an aniline oxidation black, the latter must be oxidized very quickly in a Mather-Platt and then develope the indigo and aniline black by passing through hot caustic soda.

Naphtol azo dyes which resist the action of alkalies, as for instance naphtylamine red, can also be combined with indigo salt.

The fabrics are first prepared with an

akalic beta-naphtol solution, dried, then printed with a diazo combination and indigo salt, dried, passed through caustic soda and washed.

Indigo salt can also be used in combination with basic colors, in which case the fabric is padded with tannin and indigo salt, dried, printed with caustic soda lye 36 degrees Tw., dried; then the tannin is fixed by passing through tartar emetic, washed and dyed with a basic dyestuff.

The Schlieper Baum process can easily be imitated in this way, instead of using a basic dyestuff, by using a mixture of safranine and auranine.

For the purpose of combining indigo with Turkish red two methods can be used.

The oiled fabrics are padded with bisulphite and alumina indigo salt, dried, and printed with caustic soda, washed and dyed with alizarine, or the Turkish red dyed goods are padded with indigo salt, dried, and printed with caustic soda, steamed a short time, rinsed, washed and soaped.

The latter process is particularly to be recommended when the red ground has been produced with anthrapurpurine or flavo purpurine

Not quite as practical results were obtained by printing with indigo salt in combination with alizarine extracts, as the colors were injured by being passed through the caustic soda, and the indigo salt looses considerable by being exposed for a long time to steaming.

(Indigo Salt is sold by Messrs. Kalle & Co., 77 John Street, New York.)

The Action of Light on Red Textile Dyestuffs.

II.

GROUP II—FUGITIVE COLORS ON WOOL.

The colors of this group have been exposed to the action of the light from May the 24th until June the 14th, and showed in this period a great change of color; after being exposed for one year the colors had absolutely faded away.

Triphenylmethan colors.

(a) Rosaniline. Fuchsine MN, pararosaniline, rosaniline, rubin acetate, rosanilineacetate, magenta, new magenta, acid magenta.

The magentas showed after a short time a bluer and darker tone, but after being exposed for a longer time the color had faded away.

(b) Phtaleine. Rodamine B, rhodamine S.

Diphenylmethan dyes. Pyronine G.

Acridine dyes. Acridine red 3B.

Azine dyes. Safranine magdalared.

The rhodamine, pyronine G, and acridinered 3B became yellower.

Azo colors, Ponceau acide, double brilliant scarlet G, phenanthren red,* cresil red, milling red G, Clayton cloth red, cloth red 3G extra, fast red A, fast red BT, cloth red 3B extra, ponceau 2S extra,* naphtorubine, thiorubine, bordeaux BX, fulling red R, fast red B, archil substitute 3VN, archill substitute extra and archill substitute V.

Those colors marked * fade quicker than the other colors. Cloth red 3G extra and 3B extra become clearly yellower, whereas ponceau 2S extra becomes much bluer.

Natural Dyestuffs:

Lima wood on alumina mordant, lima wood on tin mordant, camwood red on alumina mordant. Camwood red becomes darker when exposed to the light, but when exposed for a long period to the light fades fully away and only leaves a light drab color on the cloth.

GROUP III—MEDIUM FAST COLORS ON WOOL.

The colors of this group after being exposed 5 weeks showed signs of fading, after 9 weeks only a little color was left, and after 8 months hardly a trace of color was left.

Azo dyestuffs, ponceau G, ponceau B, ponceau 2R, ponceau R, scarlet GR, pyrotine, Persian red, cochenille scarlet R, 2R and 4R, ponceau 3R and 4R, naphtol scarlet, azoeosine, fast red E, cloth scarlet G, fast red C, cloth red G extra, bordeaux G, archill substitute G, cloth scarlet R, buffalo rubine azo red A, wool red, fast red D.

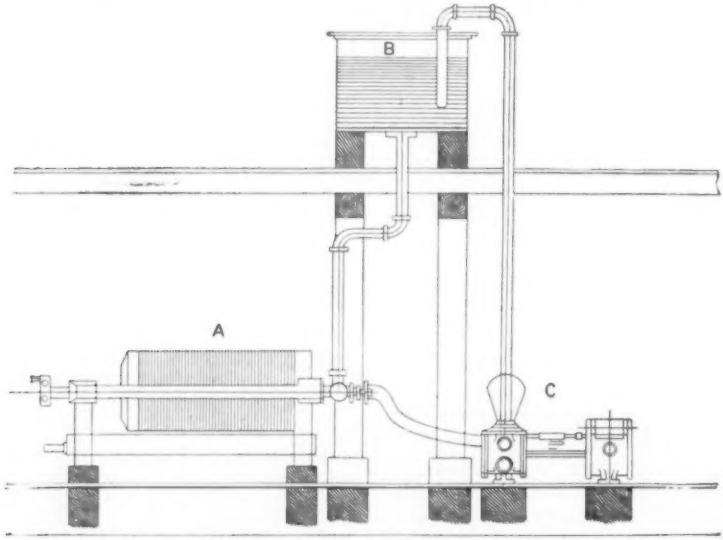
Induline, sosinduline, rosinduline B, rosinduline 2B. Natural dyestuffs, cochenille-carmoisine on alumina mordant, kermes-carmoisine on alumina mordant.

To be continued.

Purifying Refuse Water.

A patent has been granted which is controlled by Alex. P. Mende, 14 Water St., New York City, for a process of purifying refuse waters, and recovery of valuable products from wash or waste waters in factories. This process provides for purifying, decolorizing and deodorizing these waste waters prior to their being turned into the mill stream, thus accomplishing two objects, the saving of the organic products in the water and the non-pollution of the stream.

The accompanying diagram illustrates the apparatus. Referring to the diagram: "*A* is a press consisting of a series of frames, with a screw, for pressing the frames together; *B* is the receiving tank for the waste water, and is connected to the press *A* by a pipe, *C* represents an air pump, a pipe from which extends to the top of the tank and into the same, as shown. A pipe connects the air pump with the horizontal pipe of the press, having a shut off valve. Said pipes are provided with a shut off valve. The



APARATUS FOR PURIFYING REFUSE WATER.

The recovery of grease and oil substances from the waste water in woolen mills is a subject that has received much attention at the hands of chemists, and there are a number of mill plants equipped with some of the various processes that have been employed for this purpose, and we believe with general satisfaction. The advantage of Mr. Mende's process is that it takes only one day, and that it is continuous in operation, while the plant is economical in cost and in point of space.

In order that practical tests of the value of his system may be made, Mr. Mende has erected in his laboratory a model plant, so that a factory can send a barrel of waste water and test the results.

waste water is emptied into the tank *B*, where it is treated with charcoal; the valve leading to the press is opened and the valve to the pump is closed, when the water will flow through pipe connection and into the press, filtered therein, the clear water passing out at the faucets into a trough and carried off. In agitating the waste water in the tank, the valve between press and pump is closed and valve between pump and tank opened, and the pump forces air into the tank; at the same time valve between press and tank may be shut off while the water in the tank is being agitated. Air is forced into the press in filtering; the valve is closed after the water has passed

from the tank into the press, and the air forced into said press through the pipes causes the water to readily separate from the organic matter, and leave the latter in a uniform cake upon the filtering frames." It is claimed for this process that it is inexpensive and effective; that it prevents thin films of solids from forming on the filtering cloths in the press; which films are impregnable to further filtration.

Logwood Black on Jute.

Logwood black on jute yarn is dyed in the same way as cotton, by giving first a weak lime, and then an iron bath; for 100 pounds of yarn 8 pounds of green vitriol are used. Then the yarn is washed and left hanging for one day for the purpose of changing the ferrous sulphate into ferric oxide. For the process of dyeing, weigh off 8 pounds of logwood extract 30° Be., pour this into the vat, already filled with hot water, and then bring the water to boiling temperature. Then enter the jute, pass it through a few times, after which leave the same 3 hours in the bath; lift, drain, pass again through the lime and iron bath, then wash and dry.—[Exchange.

Joseph Knobloch's Process for Manfacturing Turkish Red Oil Soap.

German Patent No. 74,176.

The principle of the process is that an aluminium combination acts upon Turkish red oil, and the saponification of the resulting undissolveable combination is effected by pressure with the use of soda or potash lye, or any combination which forms dissolveable soap.

For instance, a paste is made of 18 ozs. alumina-hydrate and a pint of water; then added four pounds of Turkish red oil and 2¼ pounds of soda lye, 35° Be. This mixture is boiled until a full saponification has taken place. To see if the mixture has fully saponified, drop one drop of the mixture upon a glass plate, and if the saponification has taken place, the drop will become stiff at once.

The advantage such a soap has in the use for dyeing, is that the preparing of the material to be dyed, and the mordanting with alumina salts, is done in one operation. And it is further claimed that such a soap is a good agent to be added when goods are to be dyed with benzidine or diamine colors. The soap can also serve as an addition to printing colors as a part of the turkish red oil.—[Faerber-Zeitung.

Clogs.

Wet feet are apt to lead to illness. At slight expense dyers will be able to prevent wet feet.

Mr. Joseph Wildman 1919 N. Front Street, Philadelphia, Pa., has sent us a pair of clogs for our laboratory, and they are as sightly as some russet shoes.

Below we illustrate two of Mr. Wildman's styles and he tells us he can make

Style 20.

Style 19.

them any style wanted, and pays particular attention to this kind of work. Out of town orders will be promptly attended to. Write for circular.

Lactic Acid.

The Avery Lactart Co. is sending out the following notice to woolen manufactures:

IMPORTANT NOTICE TO WOOLEN MANUFACTURES.

Prof. Chas. E. Avery has made a quantitative analysis of a lactic acid, which is being offered under our price, and finds it to contain 10 per cent. lactic acid.

Avery's lactic acid contains nearly 30 per cent. lactic acid, and is the strongest and purest lactic acid in the market.

As to the reputation of Prof. Avery for producing pure lactic acid, we refer to Prof. F. H. Storer of Harvard College, Prof. G. F. H. Markoe, Boston, and Prof. Stephen P. Sharples (State Assayer), Boston.

We are ready at any time to furnish samples for competitive test.

Yours truly.

AVERY LACTART CO,
169 Devonshire St., Boston.

Amos H. Hall.

We are pleased to direct notice to the card on another page of Amos H. Hall, the widely known builder of cedar vats, and tanks, and dyers' tubs, Philadelphia. His large and finely appointed factory in the Kensington district of that city, has supplied for many years the wants of chemical works, dyers, paper mills, factories and brewers of all sections of the country, and many orders have been filled from Canada and South America. No similar works enjoy higher prestige for producing a class of work demanded by wealthy and exacting corporations, and manufacturers who rely largely upon the perfection of such mill auxiliaries.

The business, established in 1868, has grown under Mr. Hall's personal supervision to large proportions. Far from being local in his business, he has invited business from foreign mills, and at this time is supplying tubs for the carpet mills of John Crossley & Sons, Limited, Halifax, England, the largest carpet works in the world. Parties who contemplate placing orders for tubs, vats, or tanks can confer with Amos H. Hall, at his down town office, from 12 to 1, or can have estimates from written request as stated in his announcement.

—Pliny is the King Charles' head of the writers on the natural coloring matters. Every compiler of a treatise on dyeing quotes from the old natural historian, and we ourselves more than once have given him a favorable and entirely disinterested notice. Now an irreverent German holds him up to ridicule. Pliny, it seems, thought that indigo was found as rocks on the seashore, or as the blue of the distant mountains, a very pleasing conceit at any rate. He believed cochineal to be a vegetable product, and this, in his time, was certainly not a stupid error, considering that early in this century it was the universal opinion that the insect was the seed of the plant upon which it is found. Worst of a'l he confused cotton with flax, and had an idea that alum was a compound of water and mud. Still, a writer must have a starting point, and a reference to Pliny leads off well and gives an air of classical respectability to an essay. We refuse to give up Pliny, Sr., even if he is proved to have made a greater number of errors than even Sir Thomas Browne corrected.—[Dyer and Calico Printer.

—The Thos. A. Harris patent device, for protecting the bolts of dye vats from corrosion, is being used by several large manufacturers of dye tubes and vats. We are informed that Thos. Dolan, J. and J. Dobson, John Gay's Sons, and other large Philadelphia mills, are adopting them, which is a strong endorsement. Rights and royalties are obtained from W. H. Burkhardt & Co., 240 Chestnut St., Philadelphia.

Wm. Pickhardt & Kuttroff,

B. Anilin & Soda Fabrik Sp. P.

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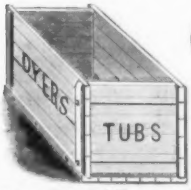

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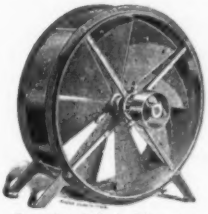

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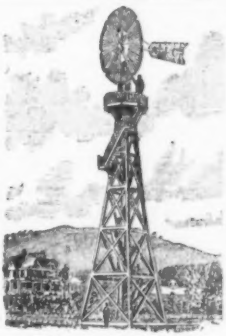

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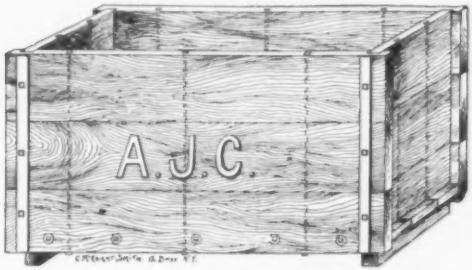

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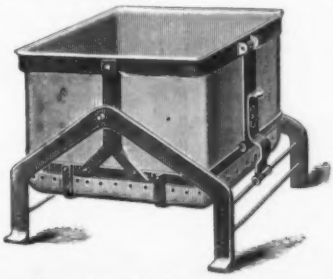

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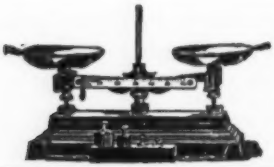

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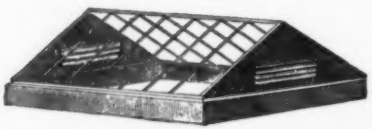

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In this edition English terms are arranged alphabetically, and a blank column is provided for remarks. Precious few of the terms are to be found in current dictionaries. This work is thoroughly up to date, even the most recent electrical inventions being treated of. The second volume, completing the alphabet, is now in press, and will be issued from the Government Printing Office in July. In the near future two other editions will be published, containing respectively Spanish and Portuguese terms arranged alphabetically. Two years' time has been required to compile this work, which is the most elaborate ever attempted by the Bureau of American Republics.

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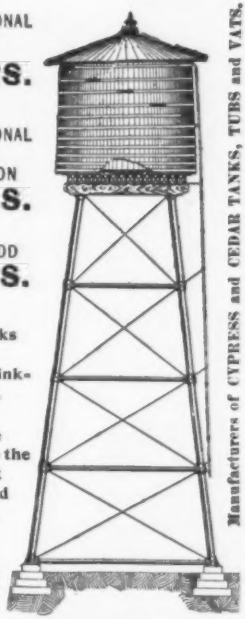

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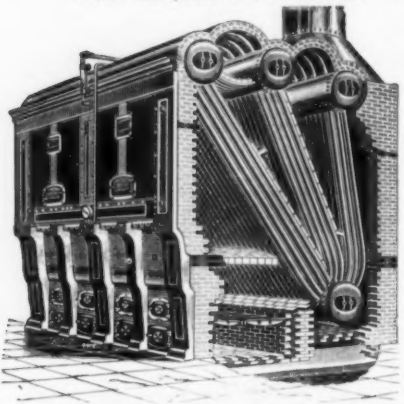

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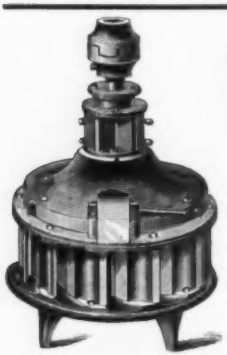

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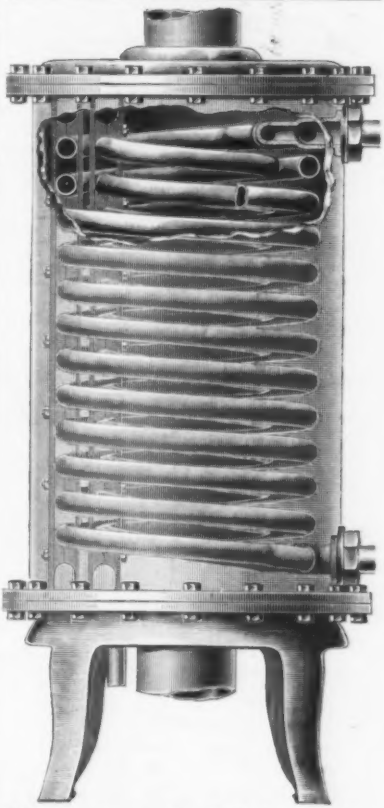

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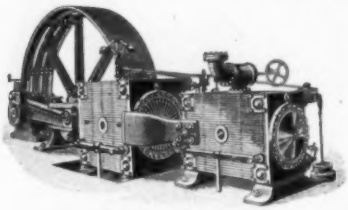

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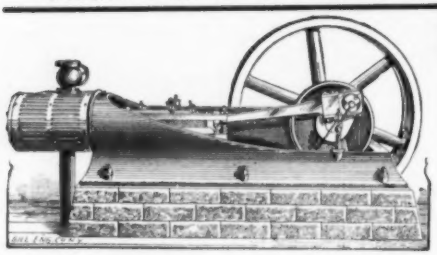

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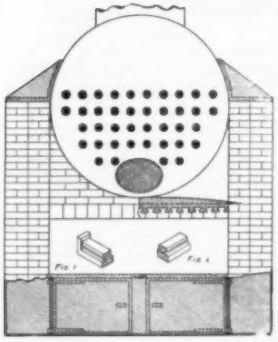

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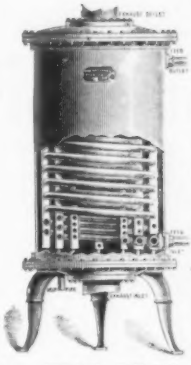


is a Brass Coil Heater, supplying water to boilers at 212° F. It has acquired a national reputation for EFFICIENCY, RELIABILITY, and LOW PRICE. Its general use proves its quality, THE BEST. 500,000 Horse Power in daily use. Send for Catalogue of Prices and Users.

The NATIONAL PIPE BENDING CO.

68 River St., New Haven, Conn.

MAGNESIA.

IN HARD TIMES, STOP THE LEAKS.

Just the time to thoroughly cover the pipes and economize on coal. No time for "make shift" coverings either. Use the best non-conductor.

Fire-Proof Magnesia Sectional

COVERINGS.

The Keasbey & Mattison Co.,

Successors to the Magnesia Sectional Covering Co.

AMBLER, PA.

SELLING AGENTS:

NEW YORK:
ROB'T A. KEASBEY,
54 Warren St.

BOSTON:
S. C. NIGHTINGALE & CHILDS,
134 Pearl St.
New England and Canada.

WASHINGTON, D.C.:
W. B. MORGAN,
Builders' Exchange.

NEW ORLEANS, LA.:
THE DELBERT ENG'R CO., Ltd.
21 & 23 Union St.
La. Miss. Ark. Texas, So. Ala.

Artificial Silk from Vegetable Pulp.

A machine has been privately at work in Bradford making silk from vegetable pulp. The process is extremely simple.

An emulsion similiar to collodion is made, and passed through a peculiar glass tube with a fine orifice, called a spinaret, from which a thread exudes.

A combination of these threads, 4, 6, 8, 10, or 12, according to the size of the yarn required, passes over a roller, and forwards to an ordinary fly spindle, and on to the bobbin. The yarn thus made goes through a second process, this time a chemical one, in order to get rid of the alcohol and reduce its inflammability to the same safe point as pure silk. This artificial silk takes all the shades of dye exactly the same as pure silk, and is strong enough for the process of weaving. The brilliancy and adaptability for all purposes where silk is required, and its cheapness (about half the prices of the genuine article), will, it is thought, bring the new invention to the front.

Pennsylvania's Unsuccessful Strikes.

The report of the Bureau of Statistics of Pennsylvania, relating to strikes and lockouts the past year, contains the following interesting facts: The strikes numbered 53, or about twice as many as were credited to the previous year. Thirty-four of these were started by the coal miners in the bituminous coal regions, nine were among iron and steel workers, four among carpet weavers, two among cotton weavers, one among chinaware manufactures' employes, one among cloakmakers and one among journeymen plasterers. Not one of these strikes was successful. The number engaged in them was 950 and the number involved 17,308. The estimated loss in wages was $1,395,423. The causes of the strikes were: For increase of wages, 6; against a reduction of wages, 34; for recognition of labor associations, 3; for semi-monthly pay, 1, and miscellaneous causes, 8.

A. WASSERMAN, Manager. Established 1876. Dr. F. E. WASSERMAN, Chemist.

TRADE IMPERIAL MARK.

IMPERIAL CHEMICAL COMPANY.

BOILER COMPOUNDS For the Prevention and Removal of Scale in Steam Boilers.

Please mail us specimen of your Boiler Scale, which we will analyze for you FREE OF CHARGE and prepare a compound for your special case, and guarantee satisfactory results. Send us a postal card and we will call. Office 432 Market St. Factory and Laboratory, 324 St. John St., Philadelphia.

THE ORIGINAL and ONLY RELIABLE

FAUL'S PATENT NEW YORK. CANDLE LUBRICATOR

Perfect Lubrication without Drip obtained by the use of Faul's Positive Lubricators. For further particulars write for catalogue.

W. J. FAUL, - 120 LIBERTY STREET, - NEW YORK.

ALFRED A. HUNTING, M. E.

CONSULTING AND MECHANICAL ENGINEER.

Specifications for Factories and Electric Stations

AT SHORT NOTICE.

SPECIAL ATTENTION PAID TO LONG DISTANCE TRANSMISSION OF POWER BY ELECTRICITY.

618 John Hancock Building, 178 Devonshire and 35 Federal St., - Boston, Mass.

NYE & TREDICK,

Manufacturers of Plain and Automatic

CIRCULAR RIB
KNITTING MACHINERY

For Knitting Ribbed Shirts, Drawers, Tights, Combinations, Skirts, Jackets, Caps, Bicycle and Athletic Suits, Hosiery, Shirt-Borders, Cuffs, Etc.

Auxilliary Machines and Supplies.

Sewing, Crocheting and Finishing Machinery, Seamless Knitters, Winders, Loopers, Presses and Shaping Boards; also, Engines, Boilers, Shafting and Pulleys.

606 Arch St., Philadelphia, Pa., U. S. A.

CHICAGO OFFICE:

18-30 W. RANDOLPH ST., CHICAGO, ILL.

ESTIMATES GIVEN FOR A

Complete Equipment of a Knitting Mill.

Franz & Pope Knitting Machine Co.,

BUCYRUS, OHIO.

ESTABLISHED 1868.

Original builders of Seamless Knitters.

WE STILL LEAD?

KNITTERS

Automatic Seamless Knitters, Loopers, Steam Presses, Hosiery Brushing Machines, Ribbers, Mitten Machines, etc.

CHICAGO OFFICE:
1001, Ellsworth Bldg.
353 Dearborn St.

Complete Hosiery Mill Outfits. Builders of Knitting Machinery for Special Purposes.

ALL MACHINES GUARANTEED.

Textile Imports.

The importations and warehouse withdrawals of dry goods at New York, up to July 26, and since Jan. 1, 1894, and for the corresponding periods of last year are as follows:

VALUE OF IMPORTS ENTERED FOR CONSUMPTION SINCE JAN. 1ST

Manufactures of—	1893.	1894.
Wool	11,937,476	4,477,113
Cotton	12,608,747	6,705,945
Silk	26,535,951	13,975,099
Flax	8,868,275	4,568,905
Miscellaneous	8,051,324	5,596,546
	68,001,773	35,323,608

WAREHOUSE WITHDRAWALS THROWN UPON THE MARKET.

Manufactures of—		
Wool	4,867,948	3,004,526
Cotton	2,538,260	2,892,870
Silk	3,605,191	3,339,717
Flax	2,013,119	2,206,217
Miscellaneous	491,079	703,709
Total withdrawals	13,515,597	12,207,049
Ent'd for consumpt	68,001,773	35,323,608
Total marketed	81,517,370	47,530,657

IMPORTS ENTERED FOR WAREHOUSE DURING SAME PERIOD.

Manufactures of—		
Wool	5,873,956	3,077,380
Cotton	2,743,973	2,749,323
Silk	4,550,464	3,430,653
Flax	2,360,665	2,099,040
Miscellaneous	686,446	833,867
Total	16,214,504	12,390,263
Ent'd for consumpt	68,001,773	35,323,608
Total imports	84,216,277	47,713,871

Ormsby Mills.

Every body in the trade does not know where the Ormsby mills are, or much about them, but in all probability it will not be many seasons before they do. How it happens that they do not know is very simple. When a new mill is to be built, it is generally named and the trade begins to learn about it before the first incision of the spade is made in the earth for its foundation—thanks to the wide awake TEXTILE WORLD and its contemporaries, and as the work progresses we hear more and more of it. With the Ormsby Textile Company—the legalized name—it is different. In Waterford, N. Y., Cohoes district, a splendid mill was recently completed and fitted up with the most improved underwear machinery. Everyone knew that Mr. Thomas Breslin was building it. Now the company has been named, some little while ago, for Mr. C. C. Ormsby, one of the stockholders. This is not the most encouraging season for a new mill, but we wish the Ormsby company success, and indeed, such we prophesy for it.

THE
KEYSTONE
KNITTER
For Seamless Hosiery.

CYLINDERS
OF
Forged
Steel

With bevel top for perfecting the stitch in the plain fabric and closing the gore in the heel and toe.

Automatic Ribbers, Loopers, Winders, Steam Presses, etc.

Keystone Knitting Machine Man'f'g Co.,
1716-20 NO. FIFTH ST., PHILADELPHIA, PA.

CRANE MFG. CO.
LAKEPORT, N. H.
Spring Needle Circular Knitting Machine
For Hosiery, Shirts, Drawers, Jersey Cloth and Stockinet.
A Specialty of Hardened Bladed Burr Wheels with Self-Oiling Brackets.

BRUSHER. A strictly first-class Brusher, especially designed to brush both sides of ribbed goods at one time. **Price $65 Net.** Send for catalogue.

LEWIS JONES, Bristol, Pa.

Pepper Manufacturing Co.

Lakeport, N. H.,

Manufacturers of

Knitting Machinery,

INCLUDING

Pepper's Flat-Ribbed Cuff Machine,

Automatic Welt and Loose Course Machine for Sock Tops. New Circular Stripes with Welt, Loose Course and Striping (Automatic), for Shirt Cuffs, Sock Tops, Hose Legs, Wristers, etc.

All kinds of

CIRCULAR RIBBED MACHINES,

For Men's Underwear, Ladies' and Misses' Hose Legs & Legnigs.

CORRESPONDENCE SOLICITED.

SHIRT Border Machines

Four and five Section Flat Cuff Machines.

THE

Merrow High Speed Crochet and Scallop or Shell Machines.

For finishing the edges of Knit Goods, Bed Blankets, Horse Blankets, or other fabrics.

For particulars and samples, address

J. B. MERROW & SONS,

133 Sheldon St., HARTFORD, CONN.

CYCLONE DRYERS

For Stockings, Underwear, Stock,

YARNS, CLOTH, ETC.

Textile Machinery and Shafting Work.

PHILADELPHIA

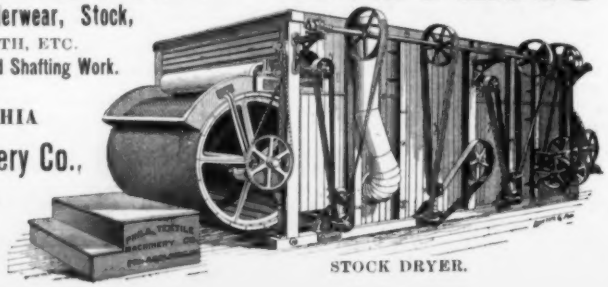
Textile Machinery Co.,

Hancock Street

above

Lehigh Ave.,

PHILADELPHIA, PA.



STOCK DRYER.

Knit.

New Mills.

—*GEORGIA, Barnesville. We have the official information that the new company recently reported, called the Barnesville Underwear Mills, have laid the foundation for their building and will be ready to begin production by the first of September. They will put in ten knitting machines and will manufacture ladies' underwear. The company consists of J. P. Thurman, J. J. Rogers, J. G. Smith, J. L. Kennedy, T. W. Cochran and B. W. Elder. A charter has been applied for.

—NEW JERSEY, Riverside. The knitting mill of F. Pfeiffer & Son has been rebuilt, and they are about ready to start up on the manufacture of ribbed hosiery.

—NEW YORK, Amsterdam. James A. Parr is starting a new mill for the manufacturer of hosiery.

—*NEW YORK, New Hartford. Machinery is being placed in the new Crescent Knitting Mill, and the company expect soon to commence operation. They will manufacture sweaters and other sporting goods.

—NORTH CAROLINA, Flat Rock. The Carolina Canning Co. are starting in the knitting business. They have purchased machinery from James Taylor, of Philadelphia, for the manufacture of seamless hosiery. The new knitting department is called the Hart Knitting Mill.

—PENNSYLVANIA, Boyertown. Efforts are being made to organize a stock company for the purpose of erecting another hosiery factory in place of the one recently destroyed by fire. Subscriptions are being solicited.

—*PENNSYLVANIA, Germantown. Messrs. Kelly & Elser, and account of whose new knitting factory we reported last week, inform us that they have commenced production with 35 knitting machines, operated on misses' ribbed hose, ladies' hose and gents' half hose. Steam power is used. They sell direct.

—PENNSYLVANIA, Meyerstown. A new stocking factory will be built on North Rail road Street, by Messrs. W. D. Hertzler and Geo. W. Donges, Jr.

—*PENNSYLVANIA, Reading. The three-story hosiery factory of Israel P. Kades is completed and production has been commenced. He has at present 20 knitting machines in operation, and will place more machines for finer work.

—PENNSYLVANIA, Towanda. A new concern, called the Patent Knitting Mills, has started at this place. We understand that James Shelton is interested, and can give further information.

—PENNSYLVANIA, Womelsdorf. It is reported that Darius Ruth will rebuild his cotton hosiery mill, which was burned June 25th.

Automatic··· Seamless ···Knitter

For Making Seamless Hosiery of all Grades.

Best Quality Fabric.
Largest Production.
Smallest cost for labor.

PLAIN AND AUTOMATIC

MACHINERY

For Knitting Ribbed Shirts, Drawers, Combination Suits, Skirts, Tights, Shirt Borders, Cuffs, Sleeves, Tops for Half-Hose, Hosiery, Etc.

All Our Machinery
GUARANTEED
In Every Particular.

NATIONAL

Automatic Knitter Co.,

734, 736 and 738 Cherry St.,

PHILADELPHIA.

Why do Knitting-Machine Builders Try to Produce a Machine to Make a

BRANSON SOCK?

JAS. L. BRANSON,

506 St. John St., Philadelphia.

Is the original inventor and manufacturer of this class of Machines, and, like most originators, manages to keep ahead of all imitators. Send for Circular A.

KNITTING MACHINE CYLINDERS.

PAXTON & O'NEILL,

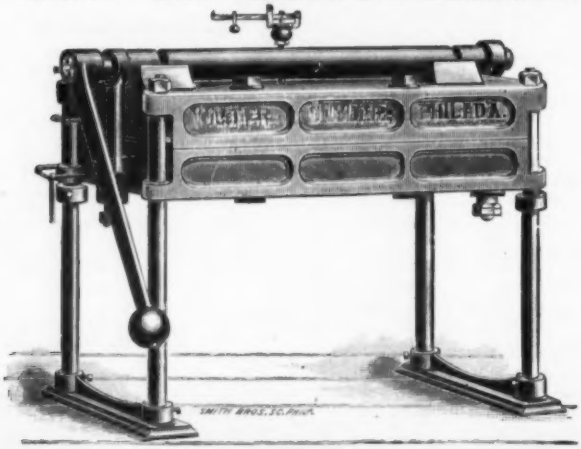
129 Bread Street, - - - Philadelphia, Penn.

Originators of the Weldless Forged Steel Cylinder. Dials, and Cylinders all sizes up to 24 inch, for the different Circular Rib Frames, Seamless Knitters, etc. The Finest that can be cut, and the Best as to Material Accuracy and Durability.

EVERYTHING FOR

Hosiery and Underwear Knitting Mills

NEW OR SECOND-HAND.



JAMES TAYLOR, 835 Arch Street, PHILADELPHIA.

Enlargements and Improvements.

—CONNECTICUT, New Haven. The Forsyth Dyeing, Laundrying & Finishing Co., are adding a line of knitting machinery to their plant.

—CONNECTICUT, Pine Meadow. The Tunxis Hosiery Co. will increase its capacity by putting in new machinery for the manufacture of ladies, hose.

—ILLINOIS, Chicago. The Paramount Knitting Co. has certified to an increase in capital stock from $10,000 to $25,000.

—MASSACHUSETTS, Everett. S. B. Pratt & Co. are building an addition to their knitting factory. The structure will be 22x41 feet, two stories high. The first story will be of brick and the other of wood.

—MASSACHUSETTS, Highlandville. William Roper, manufacturer of athletic and theatrical knit goods, has recently added to his plant a complete dyehouse for yarns.

—NEW YORK, St. Johnsville. The Lion Knitting Co., manufacturers of knit underwear, are building an addition to their mills.

—NEW YORK, Troy. The Commercial Knitting Mills Co. are building a brick addition to the old part of their factory, which is located on the Brunswick road.

—PENNSYLVANIA, Hollidaysburg. Libby & Co., manufacturers of men's seamless cotton half hose, will put in new machinery for making ladies' and children's hosiery. The factory has been idle for some time, but will soon start up.

—PENNSYLVANIA, Norristown. The Globe Knitting Mills are putting new machinery into their mill. They have recently completed a three story addition.

—PENNSYLVANIA, Reading. I. C. Hunsicker & Co., cotton and woolen hosiery manufacturers, will add a dyeing department to their plant.

Mills Starting Up.

—NEW YORK, Whitehall. William M. Keith, manufacturer of Swiss ribbed underwear, has started up his mill.

—PENNSYLVANIA, Scranton. The Scranton Knitting Co., manufacturers of hosiery, whose mills have been idle for several months, has started up with a large force of operatives.

—PENNSYLVANIA, Scranton. J. S. Luce and others have bought out the Scranton Knitting Co., hosiery manufacturers, and are preparing to put the plant in operation.

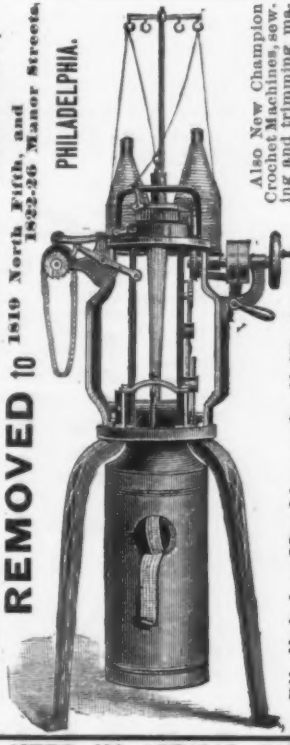
Mills Shutting Down.

—NEW YORK, Fort Ann. The knitting mill at this place, which has been idle for about a year, has started up, and it is expected will run on full time.

—MASSACHUSETTS, Stoughton. French & Ward, knit goods and rubber shoe linings, will close their mill for the remainder of the summer.

L. of C.

CHAMPION SEWING MACHINE COMPANY,
REMOVED to 1819 North Fifth, and 1822-26 Manor Streets.
PHILADELPHIA.



Also New Champion Crochet Machines, sewing and trimming machines, etc. Send for descriptions.

Rib Knitting Machines of all Kinds.

WE NEED NO SPECIAL POINT

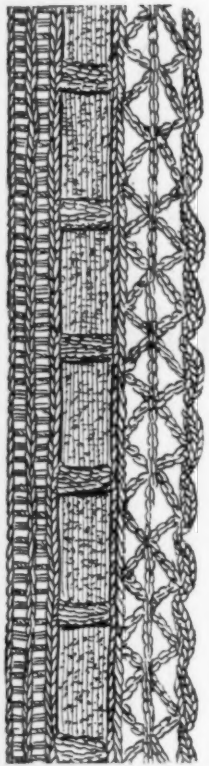
To prevent the needle from picking up the brass, nor special mechanism to prevent injury to the brass, for the needle in our looper never strikes anywhere but the centre of the point.

HEPWORTH & CO.,
Lehigh Ave. & Mascher Sts., Phila., Pa.

LACINGS For Overshirts and Underwear,
Both Tipped and Tasseled, and
OVERSHIRT NOVELTIES.
For Samples and other information, address
HEPNER & HORWITZ, 84 Leonard St., N. Y.

F. SCHOETTLE,
Manufacturer of Every Variety of Square and Round Boxes. Largest Facilities.
Paper Boxes for the HOSIERY TRADE.
312 Branch St., PHILADELPHIA.

H. G. HILLBORN,
523 Arch Street, Philadelphia.
Repairing and Remodeling of all Kinds of Knitting Machines.
Special attention to all kinds of Sewing Machines, Union Special, Wilcox & Gibbs, Champion Trimmers.



The Continued and Increasing Sales

TO FORMER USERS, AND ORDERS FROM MANUFACTURERS
WHO HAVE HERETOFORE USED OTHER PROCESSES AND METHODS

Prove Most Conclusively, That

FRIEDBERGER'S EDGINGS

THE RECOGNIZED STANDARD FINISH

For Ladies' Jersey Ribbed Underwear,

— ARE —

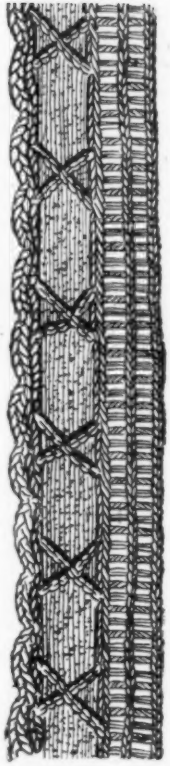
PRE-EMINENTLY THE BEST,

Thus substantiating all claims made for them in the advertisements in these and other columns during the past 3 years. Weekly production 1891, 75,000 yards; 1894, 600,000.

SUPERIOR TO ALL OTHERS.

Spring 1895 styles now ready. Samples on application.

S. FRIEDBERGER, Mfgr. Braids and Laces, Germantown, Phila.



—NEW YORK, Amsterdam. The two knitting mills of the United Knitting Co. shut down August 8.

—NEW YORK, Hagaman's Mills. The Star Hosiery Mills have shut down for an indefinite period.

—NEW YORK, Little Falls. The Riverside Knitting Mill, R. Walrath, proprietor, will shut down for two weeks in order to make repairs and add new machinery.

—NEW YORK, Sand Lake. The knitting mill of & J. R. McLaren at West Sand Lake is shut down for a few weeks, during which time new machinery will be put in.

—PENNSYLVANIA, Ashland. The knitting mill of Edwin C. Price has shut down on account of a strike among the operatives against a reduction of wages which was made two months ago. A later report gives it that the difficulty has been settled.

—We understand that Messrs. Urmer & Fritz, hosiery manufacturers of Spring City Pa., have ordered twenty new machines from a Philadelphia firm, and are running full and over time on orders in hand.

—The Western dry goods buyers are, for the most part, returned to their homes. They have been East, many of them, in July, at Nantasket, Manhattan Beach and Coney Island.

—F. A. Devlin, hosiery and underwear buyer for Carson, Pirie, Scott & Co., Chicago, must be given first place among practical nervy and courageous buyers. In buying for the fall season, now over, he went into the market in his usual way, which is always one of courage, and placed orders liberally as in the best of seasons. He will do so again, every time. Why? Because it paid.

—We have received from the Davison Publishing Co., 176 Broadway, New York, Davison's Hosiery and Knit Goods Trade Directory of the United States and Canada, for the years 1894-95. The arrangement and classification of this publication are very complete and clear. This edition contains not only a directory of the manufacturers, but also of hosiery and knit goods dyers, and commission merchants who act as selling agents for this class of goods, as well as jobbers. Price postpaid is $1.00.

—The great advantage of using cuts to illustrate goods seems to be thoroughly realized by almost all manufacturers at the present time, and, as a result, almost all are regular patrons of the engravers. The J. J. Ryder Co., at 210 Westminster St., Providence, R. I., have for years made a specialty of manufacturers' cuts, electros and printing, and, as a consequence, are widely known for the excellence of their work. If needing anything in this line one could not do better than communicate with them.

WM. COREY CO.,
Manufacturers of Knitting Machine
Latch Needles,
MANCHESTER, N. H.

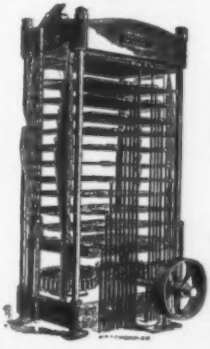
LOYAL T. IVES.
MANUFACTURERS OF ALL KINDS OF
SPRING
Knitting Needles
New Brunswick, N. J.

Excelsior NEEDLES
The Best Hosiery Needle in the market.
Manufactured by
Wardwell Needle Co., Lakeport, N. H.

Wm. Breedon & Son.,
Manufacturers of
Spring Knitting Needles,
And Burr Blades of all kinds.
Amsterdam, N. Y.

ORION TREAT,
MANUFACTURER OE
SCREW RIVETED BALMORAL AND DOUBLE RIB NEEDLES.
(Patented May 6, 1890.)
Manchester Green, - - Conn.
All work guaranteed.

H. LYDALL & FOULDS,
Manufacturers of all kinds of
Knitting Machine Needles, Narrowing Points, Hooks, etc.
Pat. Screw Rivet Balmoral Needles a specialty
MANCHESTER, CONN.



THE
CRAWFORD
Hollow Plate
Steam
Press
For Knit or Woven Goods.
Is worth investigating
J. J. Crawford & Son
Nashua, N. H.

BRINTON, DENNEY & CO.,

Builders of a Full Line of

CIRCULAR RIB AND SEAMLESS Knitting Machinery,

For Underwear and Hosiery.

213 and 215 RACE ST.. - PHILADELPHIA.

Novelty Knitting Machine Co.,

MANUFACTURERS OF

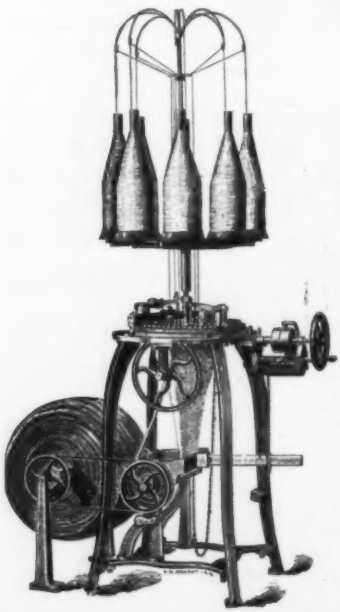
AUTOMATIC CHECKERS, VERTICAL STRIPING MECHANISM

SPRING NEEDLE KNITTING MACHINERY,

AND OTHER NOVELTY ATTACHMENTS

BURR WHEELS With Removable Hardened Wings, Shafting, Hangers, Pulleys, Etc.

F. L. WIGGIN, Proprietor, LOWELL, MASS.



Manufacturers of Ribbed Underwear,

Sweaters, Cardigan Jackets, Leggins, Cuffs, Etc., want

Knitting Machines

THAT

KNIT THE GOODS

WHICH

Bring the Profits.

Manufacturers who are using The Leighton Machines, know that it **FILLS THE BILL** completely. Correspondence is solicited from parties wishing to establish a Knitting Plant, or who may wish to impyove their present line of goods, address,

Leighton Machine Co.

MANCHESTER, N. H.

Business Established in 1873.

CIRCULAR RIB KNITTING MACHINES,

Carefully designed and well made with Solid Forged Steel Cylinders and Dials, Segmental Cam Rings, Encased Take-up, Stop Motions, etc. Standard Sizes, Reasonable Prices. Also

KNITTING MACHINE CYLINDERS AND DIALS, CHAINS, JACKS, ETC.

If interested, address

W. STAFFORD & CO., West Mill St., Little Falls, N. Y.

STAR NEEDLE CO.

Spring Knitting Needles and Points from the Best Cast Steel. Satisfaction Guaranteed.

S. K. Paramore
Manager.

New Britain, Conn.

For Goodwin's Automatic Trimmers

As applied to Union Special Machines,
PRICE $25.00.

And Goodwin's Automatic Rib Top Cutters
Price $25.00. Address

J. C. Goodwin, 523 Arch St., Philadelphia.

TRADE FAIR AND SQUARE MARK

RIBBONS

To Trim UNDERWEAR.

Best Qualities. Write for information to

JOSEPH LOTH & CO.,

Manufacturers,

65 Greene Street, - - - New York City.

GIBBONS FRAME

Sewing Machines, with or without Trimmers.

SPECIAL FEATURES:

Welting Machines, Finishing Machines, Machines for Sewing Wet Goods, Machines for Double Heel Work, Machines with Concealed Stitch for Tops of Stockings, Etc., Etc. Tables and Shafting with Transmitters.

All machines have Ball and Socket Bearings, with Hardened and Ground Working Parts.

MACHINE JOBBING.

Manufactory, Second and Diamond Sts, Philadelphia.

For Foster and other Winders,

CONE TUBES,

Manufacturer of all kinds of

Paper Cop Tubes,

Parallel Tubes, Taper Tubes,

Special Tubes to order.

J. McCAUSLAND,

33 Canal St., PROVIDENCE, R. I.

Capital, $1,200,000.

100,000 SPINDLES.
Weekly Product 120,000 lbs.
14's to 160's.

HIGH GRADE

Cotton Yarns,

SPECIALLY ADAPTED FOR

Silk, Plush, Upholstery & Hosiery

MANUFACTURERS.

American Peelers. Sea Island. Egyptian Cottons.

Superior Qualities Combed and Carded—Furnished in singles, 2, 3, 4 and 6-ply chain warps, skeins, beams, spools, tubes, cones and Lisle Thread yarns.

Cops for Weaving and Twisting. Cops for Hosiery.

GLOBE YARN MILLS,

Fall River, Mass.

ARNOLD B. SANFORD, - - Treasurer.

Arnold B. Sanford, *Pres.* Arthur H. Mason, *Treas*
Capital Stock, $500,000.

Sanford Spinning Co

FALL RIVER, MASS.

30,000 Spindles. Weekly product, 50,000 pounds 14s to 40s.

NOVELTY COTTON YARNS,

FROM AMERICAN PEELERS AND EGYPTIAN COTTONS.

OUR SPECIALTY: Superior qualities of Hosiery Yarns, Natural Shades of Cottons, and in Colors, Jaegers, Mixes, and Bleached, Hosiery Cops on Long Tubes, Skeins, Tubes, Cones and Lisle Thread Yarns. Furnished in Carded and Combed Qualities in Singles, 2, 3 and 4-plies.

YARN DEPARTMENT.

The Eastern Yarn Market.

White Cop Yarn. Spinners are not busy but are getting some orders, mostly from the hosiery trade and for rubber boot linings. Prices continue low,—and the best price offered takes the business. The low price of cotton is helping to bring the cost of yarn near where there should be a margin for the spinner. Orders are coming hard, although some are being placed, and knitters are begining to get reorders, and should continue from now out to run fairly well; this will keep spinners going. The fleece lined underwear is doing very well and a great many orders have been placed. Very little yarn is being bought at this time for the carpet trade in 8/3 ply, orders have been placed and have some time to run. The webbing trade continues in bad shape although this is the dull season. The best business noticed in white cop yarn is with the hosiery mills, which are using more cotton yarn than ever. Ribbed underwear is also calling for considerable white yarn at this time.

Combed Allen Seed and Egyptian Cop Yarn. Some orders have been placed for heavy weight Egyptian yarn in 1/9 and 1/10s, but the orders have been small and prices off. The trade on sweaters used considerable of this yarn. The reorders are coming in slowly, and more yarn still will be needed. Light weight yarns are going very poorly indeed at this time; buyers are placing few orders and only for immediate requirements. This is the dull time for fine yarn but the effect of the tariff is begining to be felt to some extent, and especially by the balbriggan trade, as the duty on this class is striken off as soon as the tariff becomes a law. What the final outcome is to be is a question. Spinners are taking orders to keep running. There certainly is no price for yarn. A manufacturer told writer that he had taken a contract for 125,000 lb. of yarn on which he would lose $2200. He took this to keep running. Yarns are being ordered at this time by the fleece lining trade in 1/50s and 1/60s, the electric wire manufacturers helping out, but we note no substantial business. The fleece lined underwear trade is doing well.

Colored Yarns. Orders have been placed for a fair amount of colored yarns at this time, mostly by the hosiery manufacturers. From orders received and contracts pending, there is no doubt that a good business will be secured. Indeed the deliveries are very fair at this time.

Hosiery mills are very cautious in placing orders on woolen yarn and make up the deficiency by running colored cotton goods. Spinners, without doubt, will have as much business as they can handle. Orders are also being placed by ribbed underwear mills for Jaeger and other mixtures. Manufacturers have been running cautiously and have at the same time, piled up some orders. A steady run may now be expected. Prices rule very low.

WOOLEN YARN.

Trade on woolen yarn to-day is worse than it has been since the beginning of dull times. No orders are being placed either by weavers, hosiery manufacturers or knitters of underwear. The hosiery men are all on cotton yarn. One very large mill informed us that his mill was a woolen hosiery plant, but to-day they were doing nothing with wool goods and all his machinery is running on cotton yarn. The River Spinning Co is shut down, and what few orders they are receiving they are sending to out side parties to get spun, as the orders are not enough to keep more than one

Combined Capital Stock, $2,250,000.00.
WM. D. HOWLAND, TREAS.

Total Spindles, 170,000.
BYRON F. CARD, AGT.

NEW BEDFORD MFG. CO.,
HOWLAND MILLS CORP'N,
ROTCH SPINNING CORP'N.

Single or Twisted, Combed or Carded.
Hosiery Yarns, Chain Warps, Skeins, Spools or Cops, also on Beams from Nos. 10's to 100's.

J. MULLINEAUX, JR., Phila. Agt., 215 Chestnut St.

Byron F. Card, Selling Agent,
NEW BEDFORD, MASS.

HIGH GRADE COTTON YARNS.

HADLEY
SPOOL COTTON AND FINE YARNS
COMPANY
COTTON SPINNERS.
MILLS AT HOLYOKE, MASS.

SPINNERS OF
FINE COTTON YARNS
30s TO 100s.
Gray, Bleached, or Colored. On cop, in skein on spools, cones or tubes.
Fine Cotton Warps, single and two-ply, in chain, etc.
95 Milk Street, BOSTON.

Wilkes-Barre Lace Mfg Co.

SPINNERS OF

COTTON YARNS.

Double-Carded, Frame-Spun,
Double-Roving, In Skeins.

30s TO 40s, TWO-PLY ONLY.

Wilkes-Barre, Pa.

JAS. CHADWICK & BRO.
Limited.

Egyptian and Sea Island **COTTON YARNS.**

COP, SKEIN, WARP, OR CONE. 20'S TO 150'S.

ALSO FULL LINE OF IMPORTED YARNS, 40s TO 200s.

503 Broome St., NEW YORK. Branch Office, 241 Chestnut St., Phila.

Hosiery AND Weaving Yarn

ALBERT IVINS CROLL,
BOSTON.

set of cards running. The only trade going to-day is with the fleece lining mills, and for this class of goods some orders are being given out. Prices are very low. There is to be a great deal of slubbing waste to be used in yarns as soon as the tariff is passed.

WORSTED YARNS.

Spinners who are "up to date" have as much business as they can take care of. Some very large contracts are being placed, and have been placed for men's serges and Clay worsteds in 2/26, 2/28 and 2/36s. The eastern spinners have been getting most of the orders as they have been meeting and making prices "that go." Philadelphia mills are getting some business as well, although many of them have been too busily engaged in watching Congress to get many orders, in the hope that after all the tariff bill would be smashed. It is indeed a strange condition of affairs. Weavers running fancy worsteds, and those mills running worsteds out of Australian stock, are positively getting no orders at all, and the looms are all idle. On the other hand, weavers running Clay worsteds have more business than they can attend to—all for immediate delivery, and the American manufacturers have the whole field, as foreigners cannot import them. Hence the demand for Clay worsted yarns.

We should say that there is no great profit in the Clay worsted goods from what we hear. All orders for yarn are for immediate delivery. This business on heavy weights will last until October or November. The orders on Clay worsted seems to be entirely in the hands of the largest mills;—the smaller mills do not seem to have gotton on to it yet. The light-weight season is coming on late; weavers do not dare make a price on their goods as they do not know how the tariff is going to affect them. The indications seem to point to a large trade on worsted yarns for next season. Spinners are inclined at this writing to hold off on account of not knowing what the tariff is to be. Knitters are using considerable worsted yarn in the present season's goods. Dress goods mills are

GRANT YARN CO.,
COMBED AND CARDED COTTON
YARNS 40s and above. AND
FITCHBURG, MASS. WARPS

O. H. SAMPSON & CO,
YARNS,
BOSTON, 67 Chauncy St.
NEW YORK, 58 & 60 Worth St.
PHILA. 206 Chestnut St.

JAMES E. MITCHELL & CO.,
Commission Merchants.
122 & 124 Chestnut St., Philadelpia, Pa.
51 & 53 Summer St., Boston.
Cotton, Woolen & Worsted Yarns.
All numbers on Hand and Made to Order.

SAWYER, MANNING & CO.,
YARNS,
86 & 88 Franklin St., NEW YORK.

J. H. LANE & CO.,
Commission Merchants.
COTTON and JUTE YARNS
110 Worth St., NEW YORK.
24 Kingston St., BOSTON.
151-53 Fifth Ave., CHICAGO.

ALEX'R KING & CO.
YARNS.
FINE IMPORTED YARNS A SPECIALTY
54 Leonard St., New York.

TILLINGHAST, STILES & CO.
COTTON YARNS
ALL NUMBERS.
Chain Warps, Skeins, Cops, Cones, Beams, Spools, Colored and Grey Yarns. Hosiery and Combed Yarns.
20 Market Square, Room 53. Providence, R. I.

TUCKER & COOK MFG. CO
MANUFACTURERS OF
WHITE AND COLORED COTTON WARPS
Nos. 6s to 30s,
On Beams, Jack Spools or in Chains.
CONWAY, MASS.

KERR THREAD CO.
—SPINNERS OF—
Fine Combed Sea Island **COP SINGLES**
All Numbers, 30s to 150s.
Fall River, Mass.

BALE, STUART & CO.
Spun Silk, Cotton and Worsted **YARNS.**
31 George St., MANCHESTER, ENG.
32 Greene St., NEW YORK.

WILSON H. BROWN & BRO.,
MANUFACTURERS OF
FANCY WOOLEN and MERINO
Knitting **YARNS** & Weaving.
GERMANTOWN, PA.
Salesroom, - 240 Chestnut St., Philadelphia.

GUERIN SPINNING CO.
JOS. GUERIN, Agent
Custom Spinning of Woolen and Merino Yarns of all descriptions (specially in fine numbers) spun according to the Belgian system.
92 South Main St., - Woonsocket, R. I.

ABEGG & RUSCH,
WORSTED YARNS
Dry Spun, Nos. 36s to 100s.
COTTON YARNS
Nos. 12s to 120s.
92 GRAND ST., NEW YORK.

WOOLEN YARNS.
All grades Woolen, Mixed and Merino yarns.
15 SETS CARDS.
EDWARD M. ROCKWELL,
LEOMINSTER. - MASS.

HENRY C. FOX,
Commission Merchant.
Dealer in odd and end lots of
COTTON, WOOLEN AND WORSTED YARNS,
No. 45 Strawberry St., Philadelphia.

CHAS. J. WEBB & CO.,
Foreign and Domestic
WOOL, HAIR and NOILS,
142, 144 & 152 to 156 N. Front St.,
PHILADELPHIA PA.

slacking up at this time, although there can be no doubt that middle of August to first of September will see a good business with them for fall weights, and the fall business is always the best, barring the time of panics. Slubbing waste is interesting manufacturers very much.

DOUBLE ROVING WHITE COP YARN.

11s and 12s	16 cts.
16s	17 cts.
20s	18 cts.

Jaeger and Camels Hair,

10s to 12s	17 cts.

Cones 1 cent extra.
Other colors quoted on application.

Egyptian Combed.

1/10s to 12s	19 cts.
1/20s	20 cts.
1/34s	29 cts.
1/40s	32 cts.
1/45s to 1/50s	34 cts.

Cones extra price.

ALLEN SEED COMBED.

1/10s	20 cts.
1/40s	32 cts.
2/40s	37 to 38 cts.

WOOLEN YARN.

Will quote on inquiry, as there is too great diversity to give satisfactory quotation.

WORSTED YARN.

Fine Australian.

2/24s	.90 cts.
2/40s	.95
2/50s	1.00
2/60s	1.15

Australian.

2/24s	.80
2/40s	.90
2/50s	.95
2/60s	1.10

Better than half-blood Australian.

2/30s	.75
2/40s	.85
2/50s	.95

Half-blood Domestic.

2/40s	.70

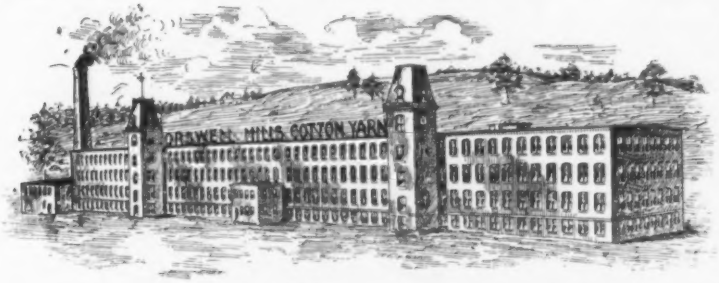
DOMESTIC.

1/4 Blood,	
2/28s, 24s, 18s	52 cts.
2/32s	53 cts.
3/8 Blood,	
2/32s	58 cts.
2/28s, 24s	58 cts.
1/2 Blood,	
2/22s, 28s	62 cts.

CAPACITY, 50,000 Spindles.

ORSWELL MILLS

FITCHBURG MASS.



COMBED OR CARDED

COTTON YARNS

In Chains and Skeins, on Balls, Beams, Spools—single or twisted.

GREENE & DANIELS MFG. CO.,

Combed and Carded

Yarns, Threads, Twines and Chain Warps,

Furnished in any manner desired by the trade.

PAWTUCKET, R. I.

THE WILLIAM CLARK COMPANY,

WESTERLY, R. I.

Mills equipped with the latest and most improved machinery.

Combed Egyptian from No. 20s to 100s. Combed Sea Island from No. 40s to 200s.

Also 2, 3, 4, 5 ply and 6, 9 and 12 ply cable laid.

Hosiery Yarns on Cops, Tubes or in Skeins, Grey, Bleached or Dyed. (Fast Colors.)

Littlefield Manufacturing Co.

K. K. HOSIERY YARNS, COPS, CONES & SKEINS.

Threads for Spooling. Single and Double Yarns for Silk, Woolen or Cotton Goods.

PAWTUCKET, R. I.

Cotton Yarns AND WARPS Of Every Description.

James F. White & Co.

COMMISSION MERCHANTS,

54 and 56 Worth St., NEW YORK.

228 Chestnut St., PHILADELPHIA.

BURLAPS all WIDTHS and WEIGHTS.

COTTON YARNS

2s TO 40s

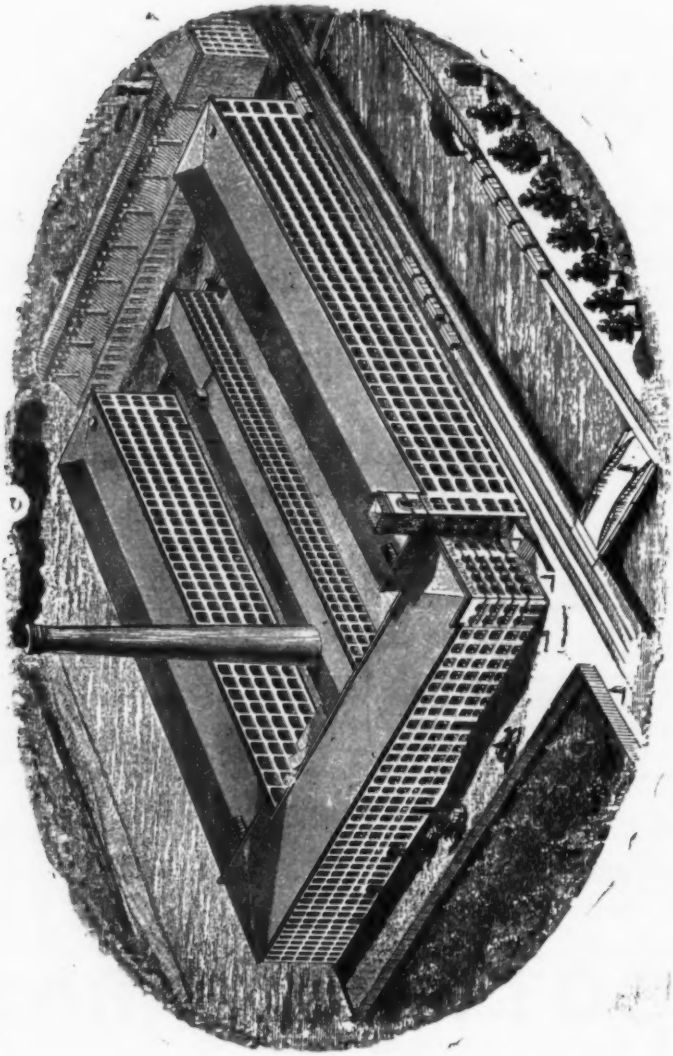
For WEAVING AND KNITTING.

WHITTIER COTTON MILLS,

LOWELL, MASS.

Washington Mills Company,

LAWRENCE, MASS.



Spinners of Worsted Yarns.

The Philadelphia Yarn Market.

Trade conditions have improved somewhat in the past two weeks, but there has been no improvement in business yet. Manufacturers are watching very closely the legislation in Congress, and with a great deal of apprehension. They want to see it settled, and anything that looks towards any kind of a settlement that is likely to last through the present administration will be welcomed as better than the present uncertainty.

The strike in Chicago made a very sudden stoppage of some lines of business, and there does not appear to be any recovery yet; notably the chenille trade. There is considerable hosiery business being done, and manufacturers are adjusting themselves to low rates of wages and low profits as rapidly as possible. We quote:

WARPS.

20/1	12½ to 13 cts.
22/1	13 cts.
26/1	13 to 13½ cts.
20/2	13¼ to 14 cts.
12/2	12 to 12½ "
30/2	18 to 18½ cts.

SKEIN.

26s filling	13 cts.
20/1	13 "
19/1 soft	13 "
4s to 8s soft	11½ to 12 cts.
10s to 12s hard	11½ cts.
10s to 12s soft	12 cts.
14s hard	12 cts.
14s soft	13 cts.
14/2 hard	11¾ to 12 cts.
20/2	13 to 13½ cts.

SOUTHERN CONES.

6s to 8s	12 to 13 cts.
10s	13 to 13¼ cts.
12s	13 to 13¼ cts.
16s	14 to 15 cts.

SOUTHERN COPS.

6s to 8s	12 cts.
10s to 12s	12½ cts.
16s	13¼ to 14 cts.

MIXED COLORED CONES.

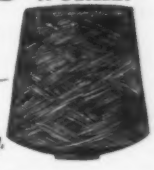
6s to 8s	15½ to 16 cts.
10 to 12s	16 to 16½ cts.
15s	16½ to 17 "

W. WARREN THREAD WORKS.

Westfield Mass

Manufacturers of

Cotton Yarns and Polished Threads. Colored Yarns and Threads on Cones a specialty.



Samples sent on application. Correspondence solicited.

YARNS

SOLIS - - BOSTON.

179 Devonshire Street.

ANDREW J. SOLIS. Jr. & CO.

RICHARD A. BLYTHE,

Fine Nos. a Specialty, 20's to 150's. Carpet Yarns and Warps, 4's to 20's.

Cotton Warps and Yarns,

114 Chestnut St., Philadelphia, Penn.

FLEMING & CHAPIN,

YARNS, THREADS, TAPES, BRAIDS,

215 Church St., Crochet Lace Edging for Ribbed Underwear. Philadelphia, Pa.

THE WILMINGTON MILLS MFG. CO.

MANUFACTURERS OF **JUTE GOODS,**

CARPET FILLING AND RUG YARNS,

Wrapping, Baling, Tobacco, Hop and Wool Twines. Cords, Ropes, Packing and Specialties.

WILMINGTON, DEL.

WEAVING and HOSIERY YARNS.

We Buy for Cash

WARPS, COPS, TWIST and SOFT SKEINS, Single, Double, 3-ply, 4-ply, etc.

COLORED YARNS for HOSIERY

on Cones, a Specialty.

Correspondence Solicited.

Winterbottom, Hyde & Co., 221 and 225 Chestnut Street PHILADELPHIA, PA.

C. M. BLAISDELL, Pres. and Treas. G. A. BLAISDELL, Vice-Pres. E. J. CARRIGAN, Sec.

Established 1860.—Incorporated 1893.

THE S. BLAISDELL JR., CO.,

Egyptian COTTON Peruvian

American Long Staple a Specialty. and all American Southern points.

Shipments direct to mill from Egypt, Peru

CHICOPEE, MASS.

EGYPTIAN COTTON

HERMAN CAPELLE,

Rothschild Building, Cor. Leonard St &W. Broadway

NEW YORK.

H. BINDERNAGEL Alexandria, Egypt.

SKEINS.

8/3 Carpet Chain	11¼ to 11½ cts.
60-yd double reel	7 cts.
8/3 slack	12 cts.
9/4 slack	12 "
10/2 double reeled	12 "
16/3 slack	14 cts.

EASTERN COPS.

26s shuttle	15 cts.
40s "	17½ to 18 cts.
10s to 12s hosiery	14 to 15 "
14s	14½ to 15 cts.
16s	15 cts.
20s	17 cts.
24s	17½ to 18 cts.
30s	20 cts.
10s to 12s shuttle	12½ cts.

Cones 1 ct. to 1 1-2 ct. extra.

Skein 1 2 ct. above cops.

Egyptian Cotton 2 1-2 to 3 cts. above white.

Woolen and merino yarns in fair demand at very low prices. Worsted in good demand at former low rates. Worsted mills are very busy, but unsatisfactory prices are complained of, both for weavers and spinners.

—Mr. Thos. Wood, of the Fairmont Machine Works, Philadelphia, spent several days in Boston early this month.

—Mr. Cann, secy. of the Penn Elevator Engineering Co., Philadelphia was confined to his home by sickness several days during this month.

—Mr. Chas. M. McCloud, agt. for the Malcolm Mills, Philadelphia, took a needed rest from business during a portion of July and August.

—The long strike at the King Philip Mills, in Fall River, is practically over, although at the time of writing the weavers were still firmly holding out. Other operatives have gone to work, and many looms are running.

—The Clark Thread Mill Co. has compromised its suit in Hudson Co., N. J., for the damages caused during the strike in 1871, for $1973, which was the cost of necessary repairs.

NATIONAL AND PROVIDENCE WORSTED MILLS

CHAS. FLETCHER, President.

MANUFACTURERS OF WORSTED, MOHAIR AND GENAPPED YARNS, SPUN ON THE

ENGLISH SYSTEM.

FRENCH SYSTEM.

Worsted Yarns in White, Mixed and Fancy Colors, on Bobbins, Dresser Spools and Skeins.

VALLEY STREET, PROVIDENCE, R. I.

ALLEGHENY WORSTED MILLS,

Wolstenholme, Harrigan, & Clarke, MANFRS. OF

ALL NUMBERS SINGLE AND TWO-PLY,

Worsted YARNS,

Sell Direct,

on Cop or in Skein, for Weaving and Knitting Purposes, in White, Natural & Fancy Mixes.

Office and Mills: Alleghney and Trenton Avenues, Phila., Pa.

CRANSTON WORSTED MILLS

CHARLES B. ROCKWELL, Treasurer, . . Manufacturers of

Mohair and Worsted Yarns, Rovings, Fancy Yarns, Worsted and Mohair Tops, also Commission Combing.

DYERS OF YARNS AND SLUBBING FOR THE TRADE.

BRISTOL, R. I.

VALLEY WORSTED MILLS,

PROVIDENCE, R. I.

Spinners of Worsted Yarns.

For Coatings, Dress Goods, Jersey, and Knitting Purposes.

Dyed to Order in all Colors.

CHAUTAUQUA WORSTED MILLS

Medium and Fine Grade Fancy, Weaving and Knitting Yarns.

GOODWILL & ASHWORTH, Jamestown, N. Y.

MALCOLM MILLS CO.,

MANUFACTURERS OF

Novelty Yarns, Silk Noil Yarns, in Fast Colors AND White.

Mills, Frankford, Pa. Office, 216 CHESTNUT ST., PHILA.

Chenev Brothers,

SILK MANUFACTURERS.

ALL KINDS OF

Knitting Silks, Ribbons AND Piece Silks

USED FOR TRIMMING KNIT GOODS.

TRAMS, ORGANZINES and SPUN SILKS, in the Hank, or on Spools or Cones, for Manufacturers' Use. Silks for Special Purposes Made to Order.

MILLS: South Manchester and Hartford, Conn.

SALESROOMS: 477, 479, and 481 Broome Street, NEW YORK.
79 Chauncey Street, BOSTON.
186 Franklin Street, CHICAGO.

GRISWOLD WORSTED CO., Ltd.

MANUFACTURERS

Spun Silk Yarns, Worsted Yarns,

FOR ALL PURPOSES.

Office 322 Chestnut Street, Philadelphia, Pa.

AUQUOIT SILK MANUF'G CO.

SILK YARNS

FOR THE HOSIERY, WEAVING AND KNITTING TRADE GENERALLY,

76 Chauncy Street, Boston, Mass.

WILLIAM RYLE & CO.,

DEALERS IN

Domestic Thrown Silk of every description. Fine Pure Dye Silks for the woolen trade a specialty. Foreign and domestic

SPUN SILK YARNS AND NOILS

Importers of European and Asiatic Raw Silk.

54 Howard St., cor. Mercer St., - NEW YORK.

ALFRED TAFF, Successor to H. T. Gaddum & Co.,

Importer of and Dealer in

SPUN SILK Yarns, Waste, Noils, etc.

69 MERCER STREET, - NEW YORK.

PHILIP WAMSLEY & CO.,

Spun Silk Yarns.

TWISTS OF ALL KINDS.

34 GREENE STREET, N. Y.

Pawtucket Dyeing & Bleaching Co.,

BLEACHERS AND DYERS OF

COTTON & COTTON YARNS, STOCKINET & JERSEY CLOTH.

OFFICE WITH BLODGETT & ORSWELL CO., Manufacturers of Glazed Yarns,

E. G. BLODGETT, Prest. PAWTUCKET, R. I. E. W. ORSWELL, Treas

Wilmington Mills Mfg. Co.

A corporation which signally sustains the reputation of the city of Wilmington, Del., as an industrial centre, is the Wilmington Mills Mfg. Co., whose president and founder is James Morrow, and whose vice-president and secy. and treas. are respectively James C. Morrow and Lewis B. Morrow.

Established in 1869, these mills have long been a source of supply, in jute manufactures, for all sections of the country, their main production being jute yarns, rope, twines and other specialties which utilize jute. The mills' capital and equipment have been enlarged at different periods, until they now rank among the very foremost. The capital of $100,000, with which the company was incorporated in 1869, has been gradually increased to $250.-000, which increase has been made to keep pace with the growing demands of trade.

The plant is handsomely located in the suburbs of Wilmington, on the P. R. R., and is supplied with six sets of improved machinery. The output is very large, and in favorable times 200 operatives are employed. J. C. & L. B. Morrow give close personal attention to every detail, and both are trained to a thorough knowledge of their affairs. A high standard of exellence is maintained by the management, which well accounts for the mills' pre-eminent position in the jute goods industry.

PERSEVERANCE MILLS.
KROUT & FITE MAN'F'G COMPANY,
Manufacturers of Celebrated Boxed Tying For all Purposes. **TAPES**
Silk and Cotton Narrow Fabrics.
Spool Tapes a Specialty.
Nos. 2632-40 MASCHER ST., PHILADELPHIA.

C. MOORE & CO.,
MANUFACTURERS OF
TWINES, THREADS AND YARNS.
Jacquard Harness Twines of all kinds on hand and made to order.
12 SOUTH FIFTH STREET
Philadelphia.

BARRY, THAYER & CO.,
Cotton Commission Merchants,
32 INDIA ST., - BOSTON.
Special attention given to orders from woolen mills for high grades and Peruvians.

RAMIE - FIBRE.
MANUFACTURERS desiring to purchase **RAW STOCK** in large or small quantities, can be supplied.
RAMIE FIBRE CO.,
care R. H. Davis & Co.,
120 N 7th St., Philadelphia, Pa.
Also Agents for the Celebrated Patent Metal Packing

T. G. HANEY & CO., - Dyers.
FAST BLACKS
ON HOSIERY AND YARNS.
JEWETT CITY, CONN.

FAST FANCY COLORS.
We make a specialty of dyeing **Mode** and **Tan** shade on hosiery and yarns, as also all other fancy shades. **Colors absolutely fast.** For particulars address
OAKDALE DYE WORKS,
913 W. York St., Philadelphia, Pa.

PERSEVERANCE DYEING COMPANY,
WOONSOCKET, R. I.,
DYERS OF ALL KINDS OF **Woolen, Worsted and Cotton Goods**
In all Shades.
FAST BLACK ON HOSIERY that will not smut or crock a specialty; an entirely new process.

HOME BLEACH & DYE WORKS
PETER B. McMANUS, Proprietor,
Dyers and Bleachers of Cotton Yarns,
In Skein and Warp. [Works at
Pawtucket and Valley Falls, R. I.

PATENTS

CROSBY & GREGORY,
34 SCHOOL STREET.

Telephone 3593, Boston. **Office Established 1854.** Cable address Aniline.

George W. Gregory, in November, 1874, resigned his position as Principal Examiner U. S. Patent Office to enter the firm.

Patents secured in the United States and all other countries. Reissues obtained. Interferences conducted. Suits brought and defended for infringement, and searches made as to the validity of patents. Prepared to give special and expert attention to cases involving knowledge of cotton, wool, leather and metal working machinery, including boots and shoes and electrical, chemical and metallurgical inventions and steam engineering. Correspondence solicited. No charge for preliminary advice. Personal consultation best when possible.

HOPEDALE, Mass., January 2d, 1893.

Mr. George W. Gregory, of Crosby and Gregory, has taken out for us since January, 1875, more than two hundred patents.

GEO. DRAPER & SONS.

Telephone 3490. Cable Address "Yelsorc."

CHARLES F. BROWN, Mechanical Expert.

WILLIAM QUINBY, Late Exr. U. S. Patent Office.
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WOOLENS, Box 719,
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List of Textile Patents Issued July, 1894.

Specifications and drawings furnished for fifteen cents each. Address "Patents," Box 222, Brooklyn, N. Y.

Black Dye. 523,138. R. Nudal, Paris, France.

Blue Dye. 522,897. W. Herozberg and O. Weber, Berlin, Germany.

Braiding Machine. 522,481. J. McCahey, Providence, R. I.

Carding Machine Condenser. Rub motion mechanism for. 523,640. E. Kay, Philadelphia, Pa., assignor to Beswick & Kay, same place.

Circular Knitting Machine. 523,111. J. L. Eck, Reading, Pa.

Circular Loom. 522,742. O. Schuler, N. Y., assignor ½ to M. Wengert.

Cloth Folding Machine. 523,499. J. E. Windle, North Grafton, Mass.

Cloth Napping and Bushing Roller. 522,728. L. Clarenbach, Jr., Philadelphia, Pa.

Cloth Napping Machine. 522,497. E. Schweinfleisch, Mulhausen, Germany.

Cloth Napping Machine. 522,560. H. S. Greene, Lawrence, and T. H. Greene, Lowell, Mass.

Cloth Sponging Cylinder. 523,107. R. K. Colson, N. Y.

Condenser of Finisher. Carding machine. 523,832. J. Cromie, Camden, N. J., assignor to M. A. Furbush & Son Machine Co., same place.

Doubling Frame Stop Motion. 522,495. E. Richards and R. Lucas, New Orleans, La.

Dyeing. 523,560. M. E. Waldstein, N. Y., and A. H. Peter, Newark, N. J.

Dyeing. 523,809. C. Dunisberg and P. Ott, Eoberfeld, Germany.

Dyeing Apparatus. 523,047. E. Maswrel, Touring, France.

Extracting Ramie Fibre. 523,509. J. P. A. Blaye, Paris France.

Knitting Machine. Circular. 522,210. H. A. Houseman, Philadelphia, Pa.

Knitting Machine. Straight. 523,820. H. Stoll and F. Mærckein, Reutlingen, Germany.

Knitting Machine. Straight. 523,867. J. G. Powell, Philadelphia, Pa., assignor to

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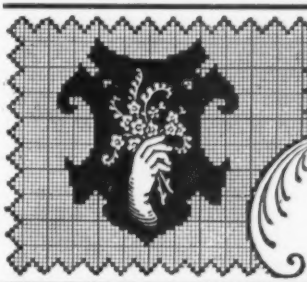

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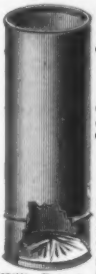

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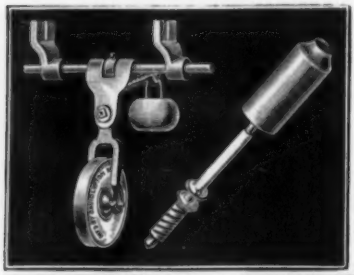

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himself and E. Powell, same place.

Knitting Machines. Extra Thread Feeding Device for. 523,866. J. G. Powell, Philadelphia, Pa., assignor to himself and E. Powell, same place.

Loom. 522,554. W. G. Connell, Philadelphia, Pa.

Loom For Weaving Narrow Fabrics. 523,114. J. O. Fryer, Chelsea, Mass.

Loom Pile Wire. 523,869. G. Segschneider, Yonkers, N. Y.

Loom Shuttle Threading Device. 522,583. E. A. Bourque, Waterville, Me., assignor ½ to G. Groder, same place.

Loom Warp Slackening Mechanism. 523,574. G. F. Hutchins, Worcester, Mass., assignor to Knowles Loom Works, same place.

Method of Manufacturing Spinning rings. 523,726. M. D. Marcy, Worcester, Mass.

Mechanism for Doubling Webs of fabrics longitudinally. 523,363. E. T. and E. H. Marble, Worcester, Mass.

Pile Fabric Loom. 522,931. J. Corzilius, Paterson, N. J.

Revolving Comb for Fibre Feeding machine. 523,818. J. C. Potter, Paterson, N. J.

Spindle Bearing. 523,849. E. J. Carroll, Worcester, Mass., assignor to W. T. Carroll, same place.

Spindle Retainer. 523,909. E. J. Carroll, Worcester, Mass., assignor to W. T. Carroll.

Spinning Frame Separator. 523,644. A. E. Rhoades, Hopedale, Mass., assignor to Geo. Draper & Sons, same place.

Spinning-jenny. 523,168. G. H. Marsh, Paterson, N. J., assignor to R. Erbsloh, Brooklyn, N. Y.

Spinning and Twisting Frame Ring. 523,200. G. O. Draper, Hopedale, Mass., assignor to G. Draper & Sons, same place.

Spooling Frame Yarn Guide. 522,378. G. E. Mayhew, Manchester, N. H.

Wool-Drier. 523,875. W. White, Nashua, N. H.

Woven Fabric. 522,555 } W. G. Connell
" " 522,556 } Philadelphia, Pa

Boiler Compounds.

The old and reputable Imperial Chemical Company, of Philadelphia, whose boiler compounds are known to nearly all the leading mills, speaks to the trade of every section on another page of this magazine. It is scarcely needed that we should do more than direct attention to their card, for their productions have rated high with the public for many years, and are sold to-day strictly on merit and with a guarantee and proof. The Imperial boiler compound is a sure remover of scale in steam boilers. It is prepared in both liquid and powder form, and the makers will furnish a kind suited to the sediment to be removed. The business was established in 1876, at 324 St. John St., Philadelphia, where the laboratory and works are still located. The office is at 432 Market St.

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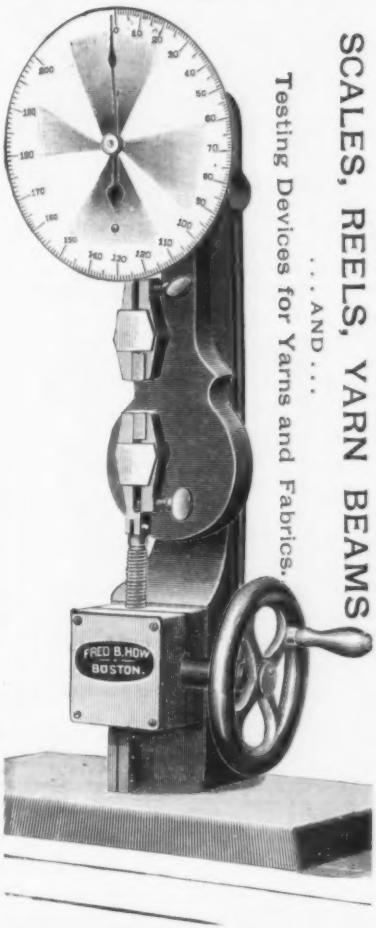

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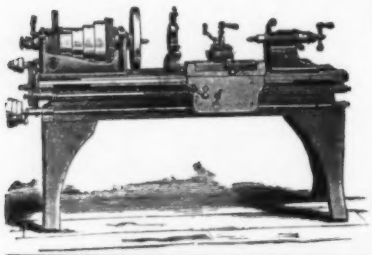

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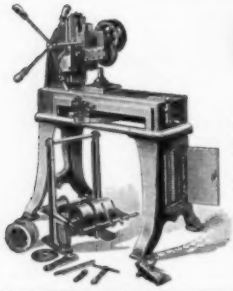

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An Interesting and Instructive Pamphlet will be sent Free of Charge.

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MILL NEWS.

Cotton.

New Mills.

—*ALABAMA, Anniston. In regard to the new bag factory which we recently reported, we have the official information that it is called the Anniston Bag & Mill Co., and that they will manufacture cloth flour and meal bags. The company began production about the 10th of August, and will operate their plant by electricity.

—GEORGIA, Tifton. It is reported that there is talk of erecting a cotton mill at this place.

—GEORGIA, Toccoa. A cotton mill, to be erected at a cost of $200,000, is proposed for this place. Mr. R. D. Yew, of Avalon, Ga., is interested.

—NORTH CAROLINA, Louisburg. Mr. G. W. Ford is interested in the erection of a cotton factory at this place.

—SOUTH CAROLINA, Nesbitt. The Nesbitt Mills Co. has been incorporated, with capital of $200,000. Work will commence soon on the construction of a new mill.

Enlargements and Improvements.

—GEORGIA, Augusta. The Warwick Cotton Mills Co., 2500 spindles, manufacturers of fine cotton yarns, it is reported will double their capacity in the near future.

—GEORGIA, Augusta. The Sibley Mfg. Co. will add 250 broad looms and 8000 spindles to their mill, also remodel their dye house.

—GEORGIA, LaFayette. The addition to the Union Cotton Mills is nearing completion. The structure is of brick, three stories high, 32x76 feet. New machinery for weaving fine heetings and towelings will be put in.

—MASSACHUSETTS, Andover. The Smith & Dove Mfg. Co., are making plans to consolidate their works at Frye Village and at Abbott Village as one plant to be located at Abbott Village. They will erect a brick building, three stories high, extending from the present structure. A building for the bleachery, dyeing and drying departments will also be erected. They expect to begin the work at once.

—MASSACHUSETTS, Fall River. Thirty-six new Mason looms are being placed in the Granite Mill No. 1. The machinery is being changed over in the No. 2 Mill and new spinning frames are being put in.

—*NORTH CAROLINA, Lincolnton. We recently reported that the Laboratory Cotton Mills had shut down in order to enlarge their mills. They inform us that they are developing their water power, and expect to increase their capacity by putting in 1000 spindles, or more if the water power will be sufficient to operate them.

—NORTH CAROLINA, Rockingham. The Pee Dee Mfg. Co. will put in 1000 new spindles and 50 new looms. They manufacture cotton plaids, cheviots, domets and cottonades.

—SOUTH CAROLINA, Graniteville. The Graniteville Mfg. have completed the addition to their weave shed, and will put in 60 new looms.

—SOUTH CAROLINA, Lexington. The Lexington Mfg. Co. contemplate building an addition to their plant in the near future. A new engine room has lately been built and a 65 h. p. engine placed in position.

Mills Starting Up.

—ILLINOIS, Aurora. Work has been resumed at the Aurora Cotton Mills, after a shutdown of seven weeks.

—NEW YORK, Stuyvesant Falls. The Van Alen Cotton Mills have started up, after an idleness of four weeks.

—NORTH CAROLINA, Stanley Creek. The Stanley Creek Cotton Mills, which have been idle about two months, have resumed on full time with a full force.

—PENNSYLVANIA, Chester. Work has been resumed at the mills of the Lincoln Mfg. Co., who manufacture cotton yarns.

Woolen.

New Mills.

—*KANSAS, Topeka. Work on the mill of the Mid-Continent Woolen Co., which we first reported last January, is being pushed rapidly, the corner stone having been laid July 28. The mill will be of brick 60x170 feet, with stone tower attached. The company will manufacture principally cassimeres, flannels and blankets. Mr. Appleyard, who was formerly engaged in the manufacture of woolen goods at Sebec, Me., is the chiefly interested party.

—MAINE, Calais. There is talk of starting a woolen blanket factory at this place. It is said that two thirds of the money has already been subscribed. No names are reported.

—*NEBRASKA, Omaha. The Edgemont Co., a new concern, has started the foundation for a woolen mill at Edgemont, S. D. They will put in 72 looms, shipped from Philadelphia,

and expect to be ready to begin production in about three months.

—*RHODE ISLAND, Harrisville. Work has begun on the rebuilding of the woolen mill of William Tinkham & Son, which was destroyed by fire last January.

Enlargements and Improvements.

—MASSACHUSETTS, Caryville. Taft, McKean & Co. are putting in new looms and building new tenements.

—MASSACHUSETTS, Charlton. Akers & Taylor, manufacturers of satinets, 5 set mill, are having placed a 50 h p. Stewart boiler. Their mills are running on full time.

—MASSACHUSETTS, Holyoke. The New York Mills, Connor Bros., proprietors, have added two of Bausch & Son's chinchilla machines.

—MASSACHUSETTS, Spencer. Twelve looms have been taken out of the Noah Sagendorph mill, and it is reported that they will be replaced by larger ones and the mill started up before long.

—NEW HAMPSHIRE, Enfield. The Baltic Mills have purchased the large bedstead factory at this place, in which they will place their finishing machinery.

—PENNSYLVANIA, Aston Mills. Rhodes Bros., proprietors of the Aston Mills, have broken ground for the erection of a new finishing room, which will be 35x90 feet in size.

—RHODE ISLAND, Pascoag. A. L. Sayles & Sons will erect in the rear of their office a stone building 17x49 feet, for the inspection of cloth. The building will be lighted by sky-lights.

—RHODE ISLAND, Pascoag. Magner Bros. have added ten new Crompton broad looms to their plant. They manufacture fine worsted dress goods.

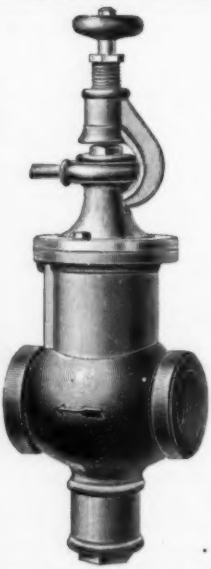
—TENNESSEE, Sweetwater. The Sweetwater Woolen Mills, 4 set, jeans, are putting in eight new looms.

Mills Starting Up.

—CONNECTICUT, Moosup. Milner & Co., 14 set, fancy cassimeres, have resumed operations at their mills.

—MAINE, Sabattus. The Webster Woolen Co., fancy cassimeres, have started up their No. 1 Mill.

—MAINE, Skowhegan. The Coburn Woolen Mills, Lewis Anderson & Co., proprietors, have started up, after a shut down of several weeks.



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One Gas Singer, Cavanaugh's make, will singe goods 60 in. wide, entirely new, cost $400; Price $150.

One Westinghouse, Standard Automatic Engine, cylinder 14 1 2 x 13 in. stroke, 125 h. p. all complete, good as new, built in 1890; cost $1700; Price $750.

One 24-inch Atlas Burr Picker, nearly new, cost $600; capacity 1000 pounds per day; Price $200.

One 48-inch Breaker Card, good order, well clothed; Price $100.

One Sargent, Cold Air Wool Dryer, cost $600; Price $150

Two Garnett Machines, 60 and 36 in. wide.

One Miller Rotary Press, 12 in. cylinder, in good order; cost $1000; Price $500.

One Boiler Pump, nearly new; cost $150; Price, $75.

One Fales & Jenckes Fire Pump, No. 4, late pattern; cost $300; Price $100.

One 40-inch Breaker Card, 18 in. doffer fast comb, gear feed, good clothing; Price $100.

One Narrow Cleveland Iron Frame Gig, Price $25.

500 Bars of loom chain.

Six Crompton Looms, three 4x4 box and three 3x3 box; Price $115 each.

Full details on application to

G. W. ARNOLD,

Troy, N. Y.

—MASSACHUSETTS, Blackstone. It is understood that Fred S. Farwell, formerly manager of the National & Providence Worsted Mill, Providence, has leased the Waterford Mill No. 2, owned by Evans, Seagrave & Co,, and that he is making arrangements to start it up at once in connection with his mill at Central Falls, R. I.

—NEW HAMPSHIRE, Wilton. The Colony Mfg. Co., flannels and dress goods, have started up their mills with a small force.

—OREGON, Ashland. The Ashland Woolen Mills have started up, after being idle for two months.

—RHODE ISLAND, Chepachet. The woolen mill of H. C. White, 16 set, worsted suitings, after a shut-down since April, has resumed operations.

—RHODE ISLAND, East Lyme. The woolen mill at this place, which has been idle for several years, has been leased to Alfred Burdick and George Lawton, who will manufacture yarns. It is understood that they have orders ahead for a year, and that they will start up the mill as soon as possible.

—RHODE ISLAND, Wickford. The Belleville Mfg. Co., fancy cassimeres, whose mills have been closed for repairs, have started up on full time. During the shut down a new flume has been built, and new floors have been laid in the dye house.

Facts and Gossip.

—LOUISIANA, Monroe. Messrs. Russell & Jacobs, proprietors of the Henrietta Cotton Mills, Washington, La., have been conferring with a number of prominent business men of Monroe, with a view to removing their factory to this place. Mr. Russell proposes the organization of a stock company with $50,000 capital. He states that if the citizens of Monroe will subscribe $30,000, he will take $20,000 worth of stock. A meeting of the citizens has been called to consider this proposition.

—MAINE, Bridgton. S. E. Lee, agent of the Pondicherry Co., has resigned his position. It is understood that he intends to purchase a mill of his own as soon as a favorable opening occurs.

—MAINE, East Wilton. The Moose Head Woolen Mill, which was owned by Franklin J. Clark, has been sold, and will hereafter be operated by a stock company, in which Mr. Clark will be a stockholder. The mill will be reopened very soon, and the manufacture of cassimeres continued.

—MASSACHUSETTS, Fall River. At a meeting of the Fall River Cotton Manufacturers' Association held August 6, it was voted to reduce the wages of all the operatives in their mills, with the exception of the weavers, 10 per cent., the change to go into effect on the 20th of the month. It was decided to pay the weavers by the pound, at the rate of 2 2-7 cents a pound.

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Water unexcelled for Wool Washing.
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Good Locations along Railroad.
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PALACE SLEEPING CARS
Through without change via
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Trains leave Boston, Causeway Street Passenger station at
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OLD TOWN, MAINE.

Unfailing water power at a very low price. Abundant supply of reliable operatives. Railroad track to the mill yard. Exemption from taxation for 10 years. Address J. W. HARMON, Agent Bodwell Water Power Company, Old Town, Maine.

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4 Tables, J. S. Crane & Co., 18-inch cylinders.
4 Tables, J. S. Crane & Co., 26 inch cylinder frames.
2 American Twist Drill, 26-inch cylinder frames.
2 George Payne & Co., Hosiery Winders, 40 spindles each.
3 Spool Trucks and about 300 Spools.
1 Truck for removing cases.
1 Miller Safe, Etc.
The above machinery is in good condition. Some of it is nearly new. Address,
WM. A. FULLER, Pawtucket, R. I.

PRACTICAL
Cotton Manufacturer
WANTED! To correspond with an experienced and practical "Cotton Mill Man," possessed of some capital to invest in a cotton mill and operate the same. The mill is not only in perfect running order but is also most favorably and beautifully located adjoining the city. Address C. L. Stadtler, Pres. Excelsior Manufacturing Company, Cuero, Texas.
Amount of capital not so important as to secure the right man who is capable of running the business successfully.

SALEM Machine Foundry & Shop
ELEVATORS
Salem, Mass.
Boston Office, 67 Chauncey St.

HYDRAULIC AND ELECTRIC PASSENGER AND FREIGHT
ELEVATORS
BELT AND HAND-POWER ELEVATORS AND ELEVATORS OF EVERY DESCRIPTION.
WITH AUTOMATIC DOORS OR GATES
PENN ELEVATOR ENGINEERING CO.
WORKS, BLOOMSBURG, PA. PHILADELPHIA OFFICE, 516 COMMERCE ST.

—MASSACHUSETTS, Lowell. The weavers of the Lowell Mfg. Co. have decided to accept the proposition made by the company to return to work at the old rate of wages with a promise of 10 per cent increase as soon as the tariff bill is settled.

—MASSACHUSETTS, Waltham. A. M. Goodale of Waltham has been elected treasurer of the Boston Mfg. Co. in place of Edmund Dwight, whom we reported had resigned. Mr. Goodale has been agent of the concern for a number of years.

—MICHIGAN, Detroit. The Detroit Alaska Knitting Co. has been incorporated, with capital of $50,000, divided into 5000 shares, half of which are taken and paid up. The shares are held by Henry L. Kanter, Sarah Brown, Edward Murcy of St. Louis, and others.

—MISSOURI. St. Louis. The St. Louis Woolen Co. has been incorporated with capital stock of $30,000, one half of which is paid in. The incorporators are Julius Labsap, Chas. H. Crucknell and M. N. Sale.

—NEW HAMPSHIRE, Nashua. The fly wheel of an engine at the Nashua Mfg. Co.'s mills burst on August 10. The engine room was a wreck, and Nos. 1 and 2 mills were shut down immediately. The loss is estimated at $10,000.

—NEW YORK, Amsterdam. The Pioneer Knitting Mills have been sold at assignee's sale to Martin Van Buren, cashier of City National Bank, for $24,000. The property was valued at $50,000.

For Sale!

WOOLEN MILL,

One set, water power. Established reputation for goods. Address, Lock Box 39, Chatfield, Minn.

WOOLEN MACHINERY FOR SALE CHEAP!

1 Set Cards.
2 Jenk's Power Looms.
1 Bobbin Winder.
1 40 spindle Stibb's Twister.
2 Card Grinders.

All in first-class condition. J. N. MUNTZ, Butler, Pa.

SECOND HAND ROTARY CLOTH PRESSES FOR SALE.

We usually have on hand, taken in exchange, rotary cloth presses of nearly all the best makes. These will be sold at a bargain, and put in first class condition, practically as good as new, if so desired. We now have on hand a 12 in. Cylinder Springbaum, and a 10 in. Cylinder Miller Press, 2nd hand. Miller Press & Machine Co., Woonsocket, R. I.

I have a new copy of

Bramwell's Book on Carding

which cost $2.50. Will sell it for $1.25. XXX this office.

—NEW YORK, Cohoes. The water is to be withdrawn from the canals of the Cohoes Water Power Co. during the week of August 26, for the annual repairs. The canals supply water power for nearly all the factories.

—NEW YORK, Dryden. It is reported that Hugo Dolge, of Dolgeville, whose mill at that place was recently burned, has purchased the Dryden Woolen Mill, and that the business of the Dolgeville Woolen Co. will be removed here.

—NORTH CAROLINA, King's Mountain. The new mill of the Dilling Cotton Co. is rapidly nearing completion, and they expect soon to be in operation. At a recent meeting of the stockholders, Mr. Craig, of Gastonia, was re-elected president, and Mr. F. Dilling as secretary and treasurer.

—NORTH CAROLINA, Pineville. The Pineville Cotton Mills have been sold to Stephen A. Jenks, of Pawtucket, R. I. The mills will be doubled in size, and the newly chartered Dover Cotton Mill Co. will either purchase the property from Mr. Jenks or the latter will become a member of the company.

—OHIO, Dresden. C. H. Magness, of the firm of C. H. Magness & Co., has sold his share of the property to R. A. Powelson. This is a woolen hosiery factory containing 50 machines.

—PENNSYLVANIA, Plymouth. The West Bros., proprietors of the knitting works at this place, have dissolved partnership, each taking one of the two mills belonging to the company.

—PENNSYLVANIA, Stroudsburg. In June we published an item saying that the Peerless Plush Co., of Paterson, N. J., offered to locate at Stroudsburg, if the town would give $10,000 bonus. It is now reported that the citizens of Stroudsburg have subscribed the necessary amount.

—RHODE ISLAND, Greenville. Richard Waterhouse, Sr., and his son James H. Waterhouse, formerly superintendent and designer at the Blackstone Woolen Mill, have leased the John Maguire woolen mill property, and it is understood that the mill will be put in operation very soon. This mill has been shut down for the past four months.

—W. R. Fleming & Co., 620 Atlantic Ave., sold during the week ending August 11:

Two 150 h. p., and one 60 h. p. Ideal engines to Henry W. Savage for his new Castle Square Theatre on Tremont St.

One 80 h. p. Ideal engine to Amherst Agricultural College.

One Ideal electric light engine for Union Brewing Co., Boston.

One Ideal electric light engine for Sewer Dept., City of Brocton, Mass.

One 50 h. p. Ideal engine to J. B. Osborne for his new building, 406 Washington St., Boston.

The Wool Market.

The latter part of July and first of August showed an increased demand for wool, both from manufacturer and dealer, large lines having been moved of all grades. Prospects, for a few days, that no tariff bill would be passed caused one of the largest week's business on record, but, with a more than possible agreement in sight, the amount of sales fall off, although there continues a good demand and desirable wools are readily disposed of.

Such an active market, after a long period of dullness, together with limited stocks for this time of year, has naturally enabled holders to ask and secure an advance price on all grades from 1 to 2 cents per grease pound.

Interior markets have been even more excited than Boston, and in many cases consigned wools have been withdrawn, thus reducing available stocks and enabling sellers to get business. There has been large sales of ungraded wools both here and to arrive by people open for business.

Ohio and Pennsylvania Delaine wools have been in good request, with limited supply, and have moved during the month from 21 to 23 cts., with more asked in some cases.

No. 1 Washed Combing have moved around 23 cts., with practically no difference in the clean cost of No. 2.

XX Fleece has been in very active demand, with supply scarcely equal to it, and prices ranged from 20 to 22 cts.; the former price has been paid recently for round lots. X Ohio moves at 19 to 20 cts. X Michigan has been moved in large blocks at 17 to 18 cts.

Unwashed und Unmerchanable is well sought for at 14 to 16 cts. Medium unwashed fleeces move readily at 18 to 19 cts., and have been in good demand.

Territory Wools have had the bulk of the business. Wool with any staple and character have been well cleaned up, and continues in active request. 38 cts. is about the clean cost of finer wool suitable for combers, with other grades proportionately lower.

Pulled Wools have been in good request especially B's, which are growing scarce, and are now costing 30 cts.

New Lambs are coming on the market and are sold about as fast as offered.

The supply of combing is practically nil.

AUSTRALIAN WOOLS

have had considerable attention from the larger users, and there has been quite a movement in combing and fine clothings. The bulk of the business has been done in Bond, although a fair amount of the finer has been taken for immediate use. Lamb's wool is in little request. The London sales closed firm, at the advance on desirable grades, but off grades were weaker.

The fact that the domestic wool clip is 20% less than last year, is an excellent argument for higher prices in Australians should a bill pass, assuming, of course, that as much machinery is run in this country as heretofore.

Partner Wanted for Knitting BUSINESS.

Foreman Knitter of large experience with a new patent for the manufacture of Rib Seamless Stockings at one third of present cost, wants a partner with working capital for manufacture of same. Address, RIB SEAMLESS, care of this paper.

WANTED!

FIRST-CLASS CARDER.

Must be a man who thoroughly understands how to cloth and keep cards in order, as well in carding different stock, such as cotton, wool, shoddy, etc. Address with references, stating experience, etc., FINISHER, P. O. Box 653, New York City.

Situation Wanted

BY AN AMERICAN MACHINIST,

45 years of age. Accustomed to care of thirty to forty men, with a thorough knowledge of book accounts and draughting. First class references furnished. Address, A. E. D., care of Textile Mfg. World, 620 Atlantic Avenue, Boston, Mass.

SITUATIONS WANTED.

The advertisers in the following columns should be addressed in care of Textile Mfg. World, or inquiries concerning them may be addressed directly to "Information Department, Textile Mfg. World," as full particulars of each advertiser are on file, and the addresses of suitable agents, superintendents and foremen for every branch of the textile industry will be furnished to manufacturers.

COTTON SUPERINTENDENTS.

568 **Has had extended experience** in best New England mills; either as superintendent or carding overseer; very best references. Shirtings, sheetings, twills, white and colored.

679 **Ginghams or white** work in New England mill. Age 36, married. High reputation won by unusually successful career. Nothing less than $2500.

934 **Ginghams, cotton dress goods,** shirtings, cotton and woolen, both fine and coarse, also cheviots. High up in his knowledge of these goods. Experience gained in Scotch mills. Is a practical dyer and finisher, and a practical designer. Desires a position as agent or superintendent, or as superintendent and designer. Age 42; married.

COTTON CARDERS.

502 **Is an excellent overseer** on combed, carded, or colored stock; was in charge of a few of the best rooms in the country. 46 years of age, salary very moderate.

645 **Coarse and fine,** colored and white. Brought up in good mills. Thoroughly understands all makes of machinery in his department.

796 **Spinning or carding or both.** Good man, good record, prefers New England or Middle states, 45 years old, married, Salary $3.00 or so.

922 **All kinds white or colored** from 1 2 to 14 hank. First-rate experience and references. Age 44, married. Salary $3.50.

COTTON SPINNERS.

555 **Ring spinning,** spooling, warping, twisting, reeling, winding and quilling. Age 38, married.

560 **Warps 4's to 60's.** Fillings, 16's to 20's Ring spinning. $4.00.

569 **Mule or Ring Spinning;** overseer. Has worked in good mills. Good references. Age 30; married; salary $3.00.

964 **Cotton spinner,** hosiery, yarns, as well as all others. Overseer eight years; preaviously second hand twelve years. Used to rapid changing over on either mules or frames. Would go on road.

COTTON WEAVERS.

176 **South preferred.** Understands fixing a loom, and not afraid to do it. Gets on well with Southern help.

429 **Has worked on fine goods** of all kinds as overseer. Salary according to position. Age 28.

539 **Excellent manager** of help. Splendid record of production. Plain and colored work. Twills, ginghams. Age 35, married.

837 **Sheetings, twills, satteens,** fancy goods, and leno. Age 34, married.

938 **Experienced on Checks,** duck, sheeting, drilling, cottonades, awnings.

WOOLEN SUPERINTENDENTS.

654 **Cloakings, Cassimeres,** dress goods, flannels. Graduated from the weaving department; age 32, not married. Moderate salary.

760 **Superintendent or Asst. Superintendent** and designer, has worked on fancy cassimers, cheviots, and meltons. Age 31 years, married. Salary moderate.

771 **An excellent Supt.** for any woolen mill needing a man with his experience on cassimeres and dress goods. A good manager of help. Salary moderate.

856 **Superintendent and Manager.** Experienced on blankets, flannels dress goods, wool and worsted. Has had thirty years' experience. Can give best of references. Unmarried. Salary and part interest can be arranged with proper parties. Has a knowledge of trade, having sold goods direct for the mill.

WOOLEN CARDERS.

178 **Is the man** conservative mills are looking for; 38 with a family, desires pleasant town to settle down in. Excellent carder on wool or cotton and shoddy mixed dress goods.

261 **Principally Low Stock.** Age 33, married. $2.75 per day. Does not change frequently.

579 **Carder of the first rank,** has worked in the very best mills, well posted. Strong point; Australian and low stock.

707 **Fine Flannel and Dress Goods** stock understood. A capable man, 35 years old, single. $3.00.

710 **Low stock his strong point,** but has carded all kinds of stock. Age 40; married. Salary $3.00.

932 **Carder and spinner** in 3 to 5 set mill. Has worked on fine dress goods and cassimere stock. Age 29; married. Wages $3.00, or so.

WOOLEN SPINNERS.

697 **Smart young man.** Good mule fixer, and had charge. Age 24, married. $2.50 per day All grades of stock.

780 **Wide experience** as boss spinner on variety of stocks: Johnson & Bassett, Davis & Furber, Woonsocket Mule, and the Wright Spinner. 28 years old and single; best of references. Will not go West or South. Salary moderate.

1017 **Boss spinner** on stock for cassimeres, beavers, cheviots, flannels and woolen shirting. Age 29, married. Wages $2 50.

1021 **Worsted overseer** of spinning and drawing, or superintendent. Mohair and long and short wools.

WOOLEN WEAVERS.

104 **American.** Practical and hard working. Good knowledge of designing, gets along well with help, understands looms thoroughly. Fancy cassimeres, shawls, dressgoods.

614 **Boss weaver and designer** has had a wide experience on cassimeres, dress goods, worsteds, casket cloths, beavers, flannels, blankets, doeskins, satinets and jeans. 45 and married. Salary $3 or so.

741 **Woolen and Worsted Weaver** on fancy worsted, cassimere and dress goods. Good references.

920 **Worked in some of the best** N. E. mills. Dress goods, unions, cassimeres, worsteds and cheviots. 28, and married. $3.00 or so.

1004 **Now in the West**, good weaver. Experienced also in the best Eastern mills. Has worked on cassimeres, meltons, cheviots, beavers, cloakings, worsteds. Is 38 and married.

WOOLEN FINISHERS.

193 **Woolen Finisher of first rank**, all classes of woolens from loom to case. Age 44; married.

358 **Heavy overcoatings**, beavers, chinchillas. Never held overseer's position, but second hand in fine mills. Would start low.

783 **Competent overseer** of wet and dry finishing. 46 years old, married. Has first-class recommendations. Many years experience on all classes of goods. Wishes to remain in New England. Fair salary.

905 **Chinchillas.** Wants position in charge of finishing. Has knowledge of about 150 styles in this line. Age 32; married. Pay moderate.

1007 **Dress goods and fine meltons** prefered, but has worked on all kinds woolens. N. Y. or N. E. states. Age 22, salary moderate

DESIGNERS.

690 **Designer.** Fancy worsteds, cassimeres. Would also like the position of assistant superintendent. Refers to any firm ever worked for. $1200 or upwards.

755 **Young and Ambitious,** has worked on fancy cassimeres and cheviots, but principally worsteds. Would take a position as designer.

760 **Desires advancement** in responsibility. Superintendent or Asst. superintendent and designer. Salary moderate; experience on fancy cassimers, cheviots and meltons. 31 and married

825 **First-class experience, English** mills, 4 years as assistant designer, and 3 years as designer and assistant manager. Fancy worsteds, woolens, serges, etc. Young man.

834 **Could introduce some good** things he claims, either in fancies, coatings, vicunas, Llamas, etc. Practical training acquired in England.

930 **Asst. Supt, overseer of weaving** and designing. Has worked on all kinds of men's wear, dress goods, kerseys beavers, etc. Age 43; married.

DYERS.

754 **Raw cotton and wool,** yarns and woolens. Has worked ten years for one company. Wages $3.00.

765 **All kinds of cotton goods** either yarns or piece, can take a position at short notice. A good overseer, age 50, married.

804 **All kinds of fancy woolen dyeing,** woolen and worsted skein, and piece; high or low grades, and raw stock.

806 **Has colored hosiery,** woolen yarn, piece goods, slubbing, raw stock and run indigo vats with success. Salary moderate.

818 **All wool and merino hosiery,** carpet yarns, raw wool, rags, shoddy, and mixed goods. Age 30; married. Salary $3.00 or so.

900 **Cotton**: long and short skein, hosiery piece dyeing, and raw stock; has worked in good mills. 33 years old; married $3.50 or so per day.

987 **Dyer,** foreman or second hand would like position in a knitting factory or flannel mill. 25 years' experience in English and American mills. Age 43. $2 per day for steady job.

KNITTERS.

673 **Superintendent of woolen hosiery.** Practical knitter and dyer. Large mill wanted. $4.00 per day.

767 **Overseer of knitting,** has had a large experience on hosiery, will go any where. Pay moderate. Age 32, and married.

773 **An experience** on all kinds of underwear and plush. A good man, 45 years old and married. Overseer's position anywhere except the South.

772 **Boss knitter,** has worked as overseer in northern New York mills, experiance on wool and cotton, heavy and light underwear. 31 years old, married. Pay very moderate.

843 **Boss Finisher** of 13 years' experience on all kinds of cut and fashioned shirts and drawers. Understands all kinds of machines used in same. 41 years old, married. Salary $3.00 per day.

815 **Superintendent** rib, circular, or fashioned Underwear and hosiery, cotton, merino and worsted. A good man. Age 45.

915 **Wants position as boss knitter** or superintendent in hosiery mill. 21 years old, unmarried, salary $3.00 and up.

MISCELLANEOUS.

840 **Beaming or Charge of Beaming.** Has worked on ginghams, tickings, shirtings and dress goods. Age 29; married; salary as beamer $2.50; in charge $2.75.

927 **Boss Dresser Tender.** Five years overseer on stock for cassimere, flannels, worsteds, kerseys, beavers, dress goods and all other kinds of woolens.

928 **Foreman dyer and finisher** of knit goods. Very extended experience on all kinds of cotton, wool, and mixed goods, in hosiery, underwear, and overshirts.

1005 **Boss wool sorter, worsted** prefered. Has worked in best New England mills. Can take position at once.

972 **Situation wanted** by a man capable of taking charge of dressing in a woolen mill, or would run a frame. Has had six years experience. 23 years old, married.

REFERENCE LIST.

MANUFACTURERS OF TEXTILE PRODUCTS.

COTTON GOODS.

Batting.

Massasoit Mfg Co, Fall River, Mass.

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Tremont & Suffolk Mills, Lowell, Mass.

Colored Cotton Goods.

Barnaby Mfg Co, Fall River, Mass.
Lewiston Mill Co, Lewiston, Me.

Corset Nets, Summer.

Wachusett Mills, Worcester, Mass.

Denims.

Pemberton Co, Lawrence, Mass.
White Bros, Winchendon Springs, Mass.

Domets, Plain and Fancy.

Eastwood Cotton Mill, Eall River, Mass.
Tremont & Suffolk Mills, Lowell, Mass.

Domets. F. M. D.

Pemberton Co, Lawrence, Mass.

Fancy Cotton Goods.

Berkshire Cotton Mfg Co, Adams, Mass.
Potomska Mills, New Bedford, Mass.
Salmon Falls Mfg Co, Salmon Falls, N. H.
Wachusett Mills, Worcester, Mass.

Fancy Embroidery Fabrics.

Wachusett Mills, Worcester, Mass.

Fine Shirtings and Dress Fabrics

Aberfoyle Mfg Co, Chester, Pa.
Appleton Co, Lowell, Mass
Williamsville Mfg Co, Killingly Ct.

Flannels, Cotton.

Elizabeth Poole Mills, Taunton, Mass.
Hamilton Mfg Co, Lowell, Mass.
Tremont & Suffolk Mills, Lowell, Mass.

Flannels, Hathaway.

Methuen Co, Methuen, Mass.

Lawns.

Continental Mills, Lewiston, Me.
Potomska Mills, New Bedford, Mass.

Lenos.

Wachusett Mills, Worcester, Mass.

Machinery Wipers.

Franklin Cotton Mfg. Co., Franklin, Mass.
Massasoit Mfg Co, Fall River, Mass.

Outing Cloth.

Tremont & Suffolk Mills, Lowell, Mass.

Prints.

Allen's Print Works, Providence, R. I.
American Print Works, Fall River, Mass.
Cocheco Print Works, Dover, N H.

Prints.

Dutchess Co, Wappinger's Falls, N Y.
Eddystone Mfg Co, Chester, Pa.
Hamilton Mfg Co, Lowell, Mass.
Merrimack Print Wks, Lowell, Mass.
Pacific Mills, Lawrence, Mass.
Passaic Print Works, Passaic, N J.
Windsor Co, N Adams, Mass.

Quilts.

Stevens Mfg Co, Fall River, Mass.

Sateens.

Berkshire Cotton Mfg Co, Adams, Mass.
Continental Mills, Lewiston, Me.
Metacomet Mfg Co, Fall River, Mass.
Potomska Mills, New Bedford, Mass.
Salmon Falls Mfg Co, Salmon Falls N H.

Scrims.

Wachusett Mills, Worcester, Mass.

Sheetings. Brown and Bleached.

Continental Mills, Lewiston, Me.

Skirts, Fancy.

Methuen Co, Methuen, Mass.

Tickings.

Hamilton Mfg Co, Lowell, Mass.
Pemberton Co, Lawrence, Mass.

Twills.

Continental Mills, Lewiston, Me.

Wide Cotton Goods.

Wampanoag Mills, Fall River, Mass.

Yarn and Warp Printers,

John Forrest, 25th & Callowhill Sts, Phila, Pa.

WOOLEN GOODS.

Beavers.

Collins, M, Woolen Mills, Collinsville, Mass.

Blankets.

Cordaville Woolen Co, Cordaville, Mass.

New Albany Woolen & Cotton Mills, New Albany, Ind.
Northern Ohio Blanket Mills, Cleveland, O
Rock Falls Woolen Co, Middletown, Ct.
Winthrop Mills Co, Winthrop, Me.

Carriage Linings.

Dustin Island Woolen Mill, Penacook, N. H.

Cashmerettes.

Haile & Frost Mfg Co, Hinsdale, N H.
Hinsdale Woolen Mill, Hinsdale, N H.

Cassimeres.

Blackinton, S. Wln Co, Blackinton, Mass.
Chase, Jno & Sons, Webster, Mass

Devonshire Mills, Goff's Falls, N H.
Old Kentucky Woolen Mills Co, Louisville, Ky.
Rock Mfg. Co, Rockville, Ct.
Sawyer Woolen Mills, Dover, N. H.

Cheviots.

Sawyer Woolen Mills, Dover, N. H.
Slater Woolen Co, Webster, Mass.
Talbot Mills, N. Billerica, Mass.

Cotton Worsteds.

Simpson & Moore, Manayunk, Pa.

Dress Goods.

Brown & Ackroyd, Lawrence, Mass.
Sagehomme & Byers, No Andover, Mass.

Washington Mills, Lawrence, Mass,

Felts.

City Mills Co, City Mills, Mass.
Dolge, Alfred & Son, 110 East 14th St, New York.
Piqua Win Mills (for paper mks), Piqua, O.

Flannels.

Allen, L L & Bros, Rochester N Y, and 99 Franklin St, N Y.
Hayward, H T, Franklin, Mass.
Kay, Thos, Woolen Mill Co, Salem, Ore.

Mascoma Flannel Co, Lebanon, N. H.

Olney, Geo W, Cherry Valley, Mass.
Simpson & Moore, Manayunk, Pa.
Stirling Mills, Lowell, Mass.

Horse Blankets, Etc.

Monadnock Blanket Co, Marlboro, N H.
Ray Fabric Mills, Franklin, Mass.
Riley, Wm B, & Co, 507 Arch St, Phila, Pa.
Rockfall Woolen Co, Middletown, Conn.

Military Goods.

Sawyer Woolen Mills, Dover, N H.

Charlottesville Wln Mill, Charlottesville, Va.

Satinets.

Aldrich, C T, Milbury, Mass.
Bigelow & Darling, Worcester, Mass.
Caryville Mills, Caryville, Mass.
Darling, Newton, Cherry Valley, Mass.

Worsted Suitings and Trouserings.

Chase, Jno & Sons, Webster, Mass.

Fulton Worsted Mills, Oswego, N Y.

National Worsted Mills, Providence, R I.

Perseverance Worsted Co, Woonsocket, R I. C B Fillebrown & Co, Selling Agts, Boston and New York.

Rock Mfg Co, Rockville, Ct,
Sayles, Fred L, & Co, Pascoag, R I.
Sawyer, Woolen Mills, Dover, N H.
Simson & Kirkaldy, Woonsocket, R I.
Springville Mfg Co, Rockville, Ct.

Washington Mills, Lawrence, Mass.

Union Cass.

Taft, McKean & Co, Caryville, Mass.

KNIT GOODS.

Athletic and Sporting Goods.

Wye, Geo E, Needham, Mass.

Children's Seamless Ribbed Waists.

Nazareth Mfg Co, Nazareth, Pa.

Eider Down.

French & Ward, Stoughton, Mass.

Fancy Knit Flannels.

French & Ward, Stoughton, Mass.

Fancy Knit Goods.

Why Bros & Co, Germantown, Pa.

Hosiery.

Contoocook Mills Co, Hillsboro Bridge, N H
Lowell Hosiery Co, Lowell, Mass

Pierce Thos A & Co, 1720 N 5th St, Phila.

Rentrew Mfg Co, Adams and Coral Sts, Philadelphia, Pa.
Sulloway Mills, Franklin, N H.
Taylor & Hawthorne Co, Wilmington, Del.

Knit Wrists for Glove Mfrs,

W D Gregory, 17 Kingsboro Ave, Gloversville, N Y.

Gloves, Mitts and Mittens.

Armstrong, Wm, Highlandville, Mass.

Gloversville Hair Co, Ltd, Gloversville, N Y. (Also fulled mittens.)

Boston Finishing Works

WILLIAMSTOWN, MASS.

BLEACHERS, DYERS AND FINISHERS

Of Pure Finish Shirtings, Sheetings, Canton Flannels and Filled Goods. Also Silesias, Satteens, Corset Jeans, Cambrics, Sleeve Linings, Pocketings, Flanneletts, and all descriptions of Dyed Goods.

NAPPING A SPECIALTY.

Being equipped with the French and other Foreign and Domestic Napping Machines, we are prepared to give any kind of Nap required, including the French FlannelFinish.

Royal Knitting Co, Johnstown, N Y.
Why Bros & Co, Wakefield St, Germantown, Pa.

Mittens, Ladies' and Children's.

White, Isaac, Highlandville, Mass.

Overshirts.

Groat, Edwin, Hudson, N Y.

Ribbed Hosiery.

Nazareth Mfg Co, Nazareth, Pa.

Scotch Caps.

Bayliss, Alfred, Utica, N Y.

Silk Hosiery.

Nonotuck Silk Co, Florence, Mass.

Silk Mittens.

Wye Wm. M, Needham, Mass.

Underwear.

Commercial Knitting Mills, Troy, N Y.
Contoocook Mills Co, Hillsboro Bridge, N H.
Crane & Waters Co, Milbury, Mass.
Jaros Hygienic Underwear Co, 831 Broadway, New York.
Jones, Lewis Bristol, Pa.
Miami Valley Kntg Mills, I & c, Hamilton, O.
Mosely & Co. Highlandville, Mass.
Piqua Hosiery Co, ladies & children, Piqua, O
Victor Knitting Mills, Little Falls, N Y.

Underwear, Men's.

Titus Shead Co. Little Falls, N Y.

Underwear, Infant's and Uuion Suits.

Max Lowenthal, Rochester, N Y.

Underwear, Men's and Women's Medium and Light Weight.

Harder Knitting Co. Hudson, N Y. Our specialty is 12 lbs. white Merino highest grade. Goods sold to Jobbers only. No agents. Address all inquiries direct to mill.

SILK GOODS.

Broad Silks.

Cheney Bros. S Manchester, Ct.

Haskell Silk Co. Westbrook, Me.
Natchoug Silk Co. Willimantic, Ct.

Braids, Trimmings, Etc.

Cheney Bros. S Manchester, Ct.

Friedburger S. 1227 Callowhill St, Phil, Pa.

Natchoug Silk Co. Willimantic, Ct

Organzines and Trams.

Cheney Bros. S Manchester Ct.
Saquoit Silk Mfg Co. 76 Chauncy St, Boston

Ribbons.

Cheney Bros. S Manchester, Ct.
Dodds, John, Paterson, N J.

Loth, Joseph & Co. 65 Greene St, N Y.

Satins.

Cheney Bros. S Manchester, Ct.
Haskell Silk Co, Westbrook, Me.

Silk Noil Yarns.

Malcolm Mills Co, 216 Chestnut St, Phila, Pa.

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Taylor, James, 116 River St, Paterson, N J.
Turner, A G, Willimantic, Ct.

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Witter, H M, & Co, Worcester, Mass.
Young, Wm M, 3638 Frankford Ave, Phila, Pa.

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Excelsior Web and Tape Co, Hop River, Ct.
Witter, H M. & Co, Worcester, Mass.

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Massasoit Mfg Co, Fall River, Mass.

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Hodson Jno M, Manayunk, Pa.
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Fleming & Chapin, 215 Church St., Phila. Pa.
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Globe Yarn Mills, Fall River, Mass.
Greene & Daniels Mfg Co, Pawtucket, R I.
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Orswell Mills, Fitchburg, Mass.
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Sawyer, Manning & Co, 86 Franklin St, N. Y.
Strauss, F A, 93 Greene St, N Y.
Wilkesbarre Lace Mfg. Co, Wilkesbarre, Pa.

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Boscowen Mills, Penacook, N H.
Whittier Cotton Mills, Lowell, Mass.

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Goodwill & Ashworth, Jamestown, N Y.
Grant Yarn Co, Fitchburg, Mass.
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Rockwell, E M, Leominster, Mass.
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Sanford Spinning Co, Fall River,
Winterbottom, Hyde & Co, 223 Chestnut St, Phila.
Warren, W, Thread Wks, Westfield, Mass.
Whittier Cotton Mills, Lowell, Mass.
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Warren, W, Thread Wks, Westfield, Mass.

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Malcolm Mills Co, Frankford, Pa.
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Griswold Wstd Co, Ltd, 322 Chestnut St, Phila.
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Wm Ryle & Co, 54 Howard St, N Y.
Saquoit Silk Mfg Co, 76 Chauncy St, Boston.
Taff, Alfred, 69 Mercer St, N Y.

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Clark Wm Thread Co, Westerly, R I.
Easthampton Spinning Co, Easthampton, Mass.
Greene & Daniels Mfg Co, Pawtucket, R I.
Hadley Co, 95 Milk St, Boston.
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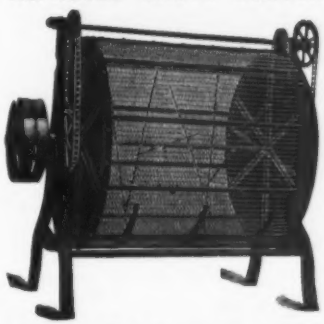

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Guerin Spinning Co, Woonsocket, R I.
Wilmington Mills Mfg Co, Wilmington, Del.
Rockwell, E. M, Leominster, Mass.
Sawyer, Manning & Co, 86 Franklin St, N. Y.
Sparta Woolen Mill, Sparta, Ill.
Winterbottom, Hyde & Co, 225 Chestnut St, Phila, Pa.

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Fleming & Chapin, 215 Church St, Phila, Pa.
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Harrison Yarn & Dyeing Co, Pawtucket, R I.
Home Bleach & Dye Wks, Pawtucket, R I.
Lewiston Bleby & Dye Wks, Lewiston, Me.
Lorimer's, The Wm H Sons' Co, Ontario and Lawrence Sts, Phila.
Mason, R D, Co, Pawtucket, R I,
Oakland Dye Works, 912 W. York St, Phila, Pa.
Pawtucket Dyg & Bleg Co, Pawtucket, R I.
Rockland Bleach & Dye Wks, Brooklandville, Baltimore County, Md.
Way Dyeing & Finishing Co, Phila.

Silk Dyers and Finishers.

Knipscher & Maas, Gun Mill, Paterson, N J.

Yarn Dyers and Bleachers.

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Haney, T G, & Co, Jewett City, Ct.

Harrison Yarn & Dyeing Co, Pawtucket, R I.
Home Bleach & Dye Wks, Pawtucket, R I.
Mason, R D, & Co, Pawtucket, R I.
Oakland Dye Works, 913 W. York St, Phila, Pa.
Riverside Dye Wks, Riverside, N J.
Warren, W, Thread Wks, Westfield, Mass.
Worcester Bleh & Dye Wks, Worcester, Mass.

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Abbreviations: b, buyer; br, broker; f, factor; c, commission; d, dealer.

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Beebe, L & Co. d, 89 State St.
Storrow, Chas & Co, b, 53 State St.
Weld, Stephen M & Co. b, 89 State St.

NEW YORK.

Brady, Thos H. br 216 Church St, N Y.
Capelle, H, Rothschild Bldg, N Y.

PROVIDENCE.

Deming, R H, & Co. br, 5 S Water St,
Hazard Cotton Co, Jeffrey Hazard, pres, 11 Market sq.
Reynolds, F W, & Co, 13 So Water St,
Rhodes, J F & co, br.
Wilcox, L Morton & Co. br, 28 No Main St

Burr Bros. 115 So Water St, Phila, Pa.
Bowles, Wm & Sons, Memphis, Tenn.

Egyptian Cotton.

Blaisdell, Saml, Jr, Co, Chicopee, Mass.
Capelle, H, Rothschild Bldg, N. Y.

Cotton Waste.

Barlow, M T, 108 Pocasset St, Fall River, Mass
Coburn, Walter & Co, Lowell, Mass.
Ford, W & R, Orchard & Mill Sts, Frankford, Pa.
Hill & Cutler, 567 Atlantic Ave, Boston.
Hull, Saml E Millbury Mass
Massasoit Mfg Co. Fall River, Mass.
Mayo, A A & Co, Springfield, Mass.
Olmstead & Tuttle Co, Chicopee, Mass.
Remick, T & Co, 489 Atlantic Ave, Boston.
Salem Waste Co. Salem, Mass.
Thorpe, John F, 185 Summer St, Boston, Mass

Peruvian Cotton.

Barry, Thayer & Co. 32 India St, Boston.
Blaisdell, Thos S. Jr. Co, Chicopee, Mass.
Grace, W R & Co, T H Higgins, Agt, 84 W Broadway, New York.

Australian Wool.

Hartley, Fred, 612 Atlantic Ave, Boston.

Wool.

Abreviations: d, dealer; c, commission; br, broker; p, puller; b, buyer; imp, importer; s, scourer.

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Brown & Adams. c, 207 & 209 Federal St.
Clark, R B 230 Congress St, c and br.
Cordingly, W S & F. 559 Atlantic Ave.
Cross, Chas F & Co. d, 177 Purchase St
Eisenmann Bros. c, 211 & 213 Federal St.
Hallowell & Donald. c, 556 Atlantic Ave.
Harding & Caverly, c, 301 Congress St.
Wilder, Walter & Co. 170 Summer St, Boston
Wright, John G, 612 Atlantic Ave.
Blaisdell, S, Jr, & Co, Chicopee, Mass.

PHILADELPHIA.

Hartley, Fred, 30 Letitia St.

Webb, Chas J. & Co. 136 N Front St

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Grace, W R, & Co. Hanover Sq, N Y.
Hartley, Fred 5 Mansion House Blk, Troy.

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Bowers, Jas & Son, Ltd, Chester, Pa.
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Collings, Taylor & Co. Cleveland, Ohio.
E, Brookfield Woolen Co, E Brookfield, Mass.
Gray, T H & Co, 154 Federal St, Boston.
Little Falls Extract Co, Little Falls, N Y.
Mulhauser, F. & Co, Cleveland, O.
O'Neill, H A & Co, 163 No Front St, Phila, Pa.
Smith & cooley, Stafford Springs, Conn.
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Sullivan, R I, 155 Federal St, Boston.

Wool Waste.

Bliss, Taft & Co. Norwich, Ct.
Dwight, Smith, 463 Atlantic Ave, Boston.
Farnum, Jerome B, 127 Canal St, Providence, R I.
Graves, Frank B, 14 Bleeker St, Albany, N Y.
Hull, Saml E, 112 Front St, Worcester, Mass.

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Hamilton, W R & son, Lawrence, Mass.

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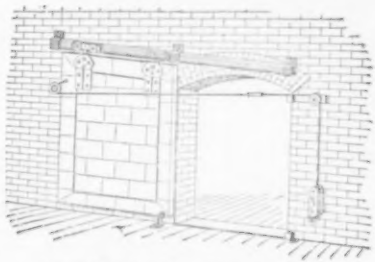

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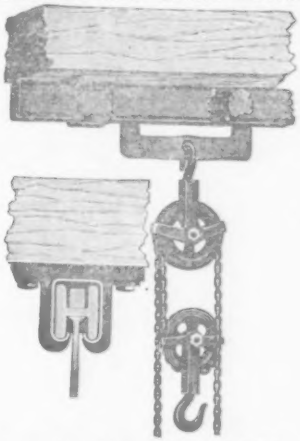

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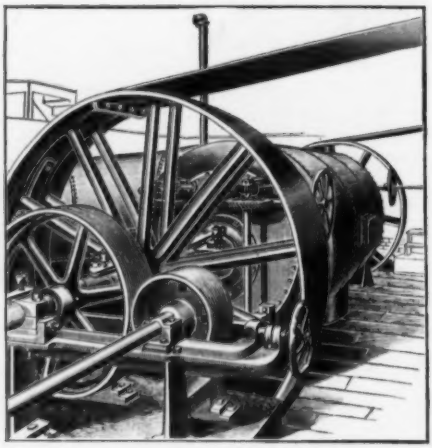

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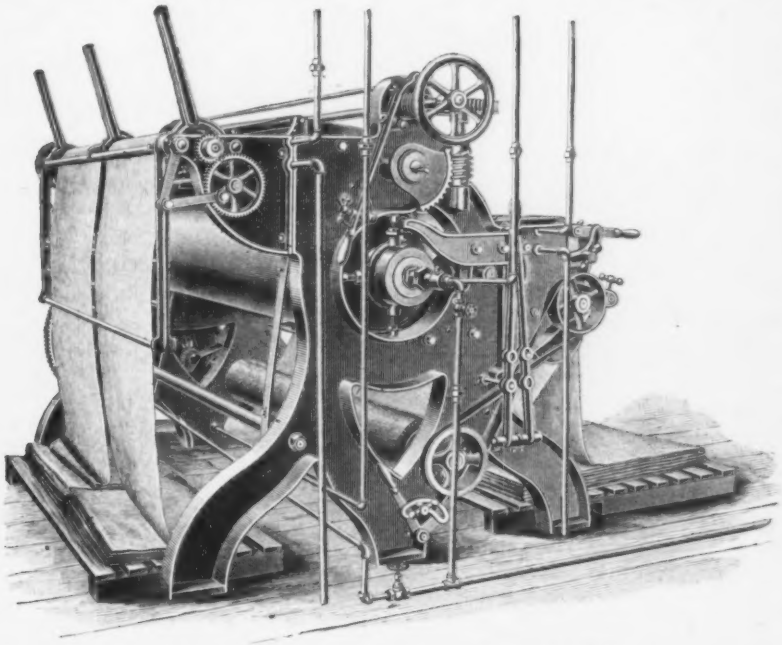

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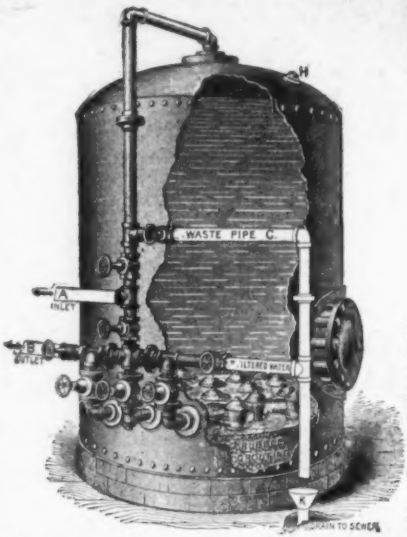

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